GENETIC PSYCHOLOGY MONOGRAPHS

Child Behavior, Animal Behavior, and Comparative Psychology

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TABLE OF CONTENTS

No. 1

Measuring human relations: An introduction to the study of the interaction of individuals 3
By Elliot D. Chapple

No. 2

Aggressive behavior in young children and children's attitudes toward aggression 151
By Mary Delafield Fite

No. 3

Student attitudes toward religion 323
By Erland Nelson

The prediction of the outcome-on-furlough of dementia praecox patients 425
By Joseph Simeon Jacob

Significant characteristics of preschool children as located in the Conrad Inventory 455
By Katherine H. Read

No. 4

Learning by children at noon-meal in a nursery school: Ten "good" eaters and ten "poor" eaters 491
By Jeanette B. McCay, Ethel B. Waring, and Paul J. Kruse

Studies in *the interpretation of play*: I. Clinical *observation of* play disruption in young children 557
By Erik Homburger Erikson

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MEASURING HUMAN RELATIONS: AN INTRODUCTION TO THE STUDY OF THE INTERACTION OF INDIVIDUALS 1

By Eliot D. Chapple *(With the collaboration of Conrad M. Arensberg)*

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MEASURING HUMAN RELATIONS: AN INTRODUCTION TO THE STUDY OF THE INTERACTION OF INDIVIDUALS*

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	Preface	5
I.	Human relations and the method of science	9
II.	The class of phenomena	21
III.	Measurement	31
IV.	*The analysis of hierarchical institutions: Sets, components, and systems*	51
V.	An algebraic representation of a hierarchy	79
VI.	*Symbols and the units of interaction*	95
VII.	The analysis of the context of situation	111
VIII.	Conclusion	129
	References	131
	Appendix *A*	153
	Appendix *B*	137
	Appendix *C*	141
	Appendix *D*	143
	Appendix *E*	147

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PREFACE

During the last few years, Dr. Conrad M. Arensberg and I have been engaged in the analysis of material collected by ourselves and others in the investigations of Newburyport, Massachusetts, and County Clare, Ireland. These researches, directed by W. Lloyd Warner, developed from the social anthropological studies of Bronislaw Malinowski, A. R. Radcliffe-Brown, and W. L. Warner in primitive society. They were an attempt to apply to groups in Western European civilizations the methods used in researches on primitive peoples.

After returning from the field, Dr. Arensberg and I became more and more concerned with the need of developing precise methods of analysis of human relations. Up to this time, we had accepted the premise that the aim of the investigation was to give a descriptive and literary account of the societies we dealt with, and Dr. Arensberg's book, *The Irish Countryman*, based on his Lowell lectures, was an effort in this direction. Necessary to any description, however, is some sort of scheme of interpretation, and our basic idea was to show how the various activities of men in these societies were interdependent. Much of our information, as in any field investigation, consisted of statements of informants, and we had great quantities of this sort of material, together with much material gathered from newspapers, etc. Two questions arose in the course of the investigation.

The first was simply how to know what was significant and what could be disregarded. We had used such terms as "solidarity" (Durkheim), "opposition," "superordination and subordination" (Simmel), "integration" (Radcliffe-Brown), "function" (Malinowski), as explanatory concepts, but we could find no clear rules by which we could be certain that any of these applied to the particular material that we had to analyze. The second difficulty arose in the nature of the description. *The ethnographic tradition* assumes that everything in a society should be described. However useful this may be for primitive groups, in modern communities the description of technical processes and of the rituals of churches and secret societies is obviously an act of supererogation, since this sort of thing has already been well described in technical publications.

As we tried to sketch an ethnographic description, we became more and more certain that such an ordering of the facts could be based

upon rules arising from the process of description, which we had failed to recognize. If the material was to be treated systematically, we saw that such rules would have to be made precise, and in so doing we discovered that we had to develop operations which could be used non-intuitively. When we examined the rules of thumb we had used to organize our literary description, we saw that they were a mixture of intuitive perceptions and empirical generalizations. We could not explain even to ourselves where the intuitions began and the observations ended.

It was only on closer examination of our methods of analysis, however, as the result of the influence of the works of Malinowski, Ogden and Richards, Korzybski, Bridgman, Pareto, and of our personal association with Dr. Lawrence J. Henderson, that we began to see that much of what we thought was ordering of fact by the above-mentioned explanatory concepts could not be subjected to verification. In fact, what we were trying to do was to get at the observable facts of human relations through the interpretation of the language of our informants, and we therefore had to do two things: First, work out objective methods for the analysis of language, and second, find out what the observable facts actually were and how they could be described objectively.

Here we were immensely aided by the work of Bronislaw Malinowski. He too had been faced with the problem of the interpretation of language, and in his supplement to Ogden and Richards' *Meaning of Meaning* (referred to later on in this book), he outlined how language was a mode of action and how "meaning" could only be derived by referring the symbols used to the actions of individuals. We then turned to the analysis of structure to which many of these symbols referred, and finally to the happenings between individuals who we regarded as making up these structures, such as families, stores, factories, churches, government institutions, clubs, and other associations. We were then able, finally, to find out what could be studied objectively and how we might go about translating our intuitions into verifiable facts.

Our methods developed from a need to treat our material in an objective fashion. They are tentative, but seem to us to be a useful way to describe human relations. The present volume is to serve as an introduction to methods that can be applied in quantitative investigations of human interaction. Other commitments prevented

Dr. Arensberg from collaborating in the writing of this volume, but he worked with the author in formulating the present statement, and gave many valuable suggestions in the final preparation of the manuscript.

We should like to take this opportunity to express our thanks to the many people who have assisted us during the unsteady development of the ideas represented here, particularly to Professor Edwin B. Wilson, Dr. Carl Doering, and Miss Alice L. Forbes of the Harvard School of Public Health, Dr. W. J. Crozier of the Biological Laboratories, Harvard University, and to Dr. Ivan Getting, for their patience in aiding us to develop a mathematical point of view. Dr. Willard van O. Quine has helped us in formulating precisely many of our definitions, and my colleague, Professor Fritz J. Roethlisberger of the Department of Industrial Research, has been more than helpful in many discussions of the problems here treated. To our colleagues in the two researches, W. Lloyd Warner, Solon Kimball, Burleigh B. Gardner, Buford Junker, Leo Srole, Josiah Low, Paul Lunt, Robert Snider, and Marian Lee, we are most grateful, for without the material which they helped to collect, and without the collaboration that we enjoyed during the whole period of the field investigation, we should never have been able to reach our present position. The interest and support of Dr. Elton Mayo and Dean Wallace B. Donham of the Graduate School of Business Administration, and Dr. Ernest A. Hooton of the Department of Anthropology, have greatly facilitated the uninterrupted development of the work. Especially, I must thank Miss Grace Senders for her assistance in the writing and editing of the volume and in analyzing material, and Mr. F. L. W. Richardson, Jr., for his work in analyzing material.

Lastly, we want to thank Dr. Lawrence J. Henderson, to whom this book is dedicated. His criticism of our early efforts helped to make explicit the steps necessary to develop a scientific treatment of the phenomena, and his suggestions helped crystallize the operations we have used.**

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I. HUMAN RELATIONS AND THE METHOD OF SCIENCE

There are difficulties in beginning any work which deals with the relations of individuals. Ordinarily, it is easy to classify the subject matter of a book; the author begins with the label of his subject and a statement of his point of view towards it. But this monograph suffers from the previous heterogeneity of the subject, namely, that the relations of individuals are studied in many different disciplines. Physiologists, medical men, psychologists, psychiatrists, psychoanalysts, sociologists, ethnologists, anthropologists, geographers, economists, political scientists, historians, social workers, administrators, to mention only a few, are all dealing in some way with human relation. And biologists, ecologists, animal sociologists deal with the relations of animals to one another. A complete list of the titles of all the subjects dealing wholly or in part with the interactions of individuals would fill a page. With such a list to choose from, no one label gives the general scope of the subject. The author and his collaborator are anthropologists, and although we regard human interaction as the subject of what is called social or cultural anthropology, the ordinary use of the term is much different from our own definition. In order not to use a label which might imply a narrower field of interest than we actually intend to treat, we have indicated by the title that we shall study the interaction of individuals without regard for traditional boundaries, and in particular, we shall outline methods of measurement which can be applied to human relations.

We have further limited the field of consideration by excluding material gathered from subhumans, except by occasional reference. The reason for this is simple. Biologists and animal sociologists consider man an animal, and are more likely to be willing to apply methods of observation and measurement worked out on man to other animals. On the other hand, people who concern themselves with the study of man are sometimes suspicious of results drawn from subhuman material unless the methods employed in obtaining them were also applied to humans. Therefore, we work primarily with man without informing them that man is an animal.

We shall make an innovation which it is well to point out to the unsuspecting. In this book we intend to apply the methods of the exact sciences to the interactions of people. We shall, there-

fore, rigorously limit ourselves to inferences derived from observation. We shall not make assumptions about our knowledge of man or any single man's ideas about himself. We shall use objective techniques, and our primary interest will be the development of methods for measuring human relations in order to predict the behavior of individuals in interaction. We shall not concern ourselves with the terminology and ideas used in all the subjects listed above. Nor shall we try to translate their terminology into ours, nor point out in what ways the ideas of other people are somewhat like our own. We shall refer to others only where there are definite established facts having a bearing on our own definitions and description.

One of the most curious phenomena in the history of human thought has been the consistent inability of men who have been concerned with human behavior to apply the methods which have had such evident success in the physical sciences. Not only has this been true of sociologists and psychologists, economists, political scientists and so on, but even the physiologists, when they have had to deal with the relations of animals to the external environment, have often been caught in curious verbal cages. Pavlov constantly refers in his lectures to his surprise and gratification that he has had such fine results from the objective method, and his reiteration of the story of his difficulties in emancipating himself from subjectivity, from talk of "will" and "thought," and so on, indicates that he never felt entirely at home with his objective vocabulary (18). Of course, many physiologists have been exempt from this sort of difficulty, as the works of Jaques Loeb, G. H. Parker, W. J. Crozier, and many others abundantly prove.

The troubles that students of behavior have found themselves in have been due not so much to a natural tendency to indulge in anthropomorphic thinking but rather to the fact that the methods of science have not been clearly formulated until recently. Although the experimental method has been highly developed in physics, chemistry, and physiology, the justification of its use was entirely empirical. If you wanted to get results you had to use it, and in the kinds of problems with which the physicist and chemist were dealing, the end certainly justified the means. Many of the ideas about "forces," "space," and so on, were extremely primitive, and although striking results were obtained, they were due with few exceptions to the

tractability of the material rather than to the sophistication of the scientists as to their methods. When the student of animal and human behavior tried to take over the experimental method, he found that this boasted tool of the physical sciences would not work in anything like the same way. Experiments in "learning," "discrimination," etc., as well as field observations were not so very different from work done in the sciences, but the results of many of these "experiments" and "observations" seemed to be singularly barren.

The consequences of this discovery were in the best anthropomorphic tradition. In spite of the achievements of physiologists, some of whom were achieving significant results with the experimental method, it became more popular to believe that man, or, as an alternative theory, all living beings, were too complex to be predictable. The failures of the experimentalists, or at least their lack of conspicuous successes, reinforced the "vitalists," "idealists," and others who adhered to special revelation. The early stages of the application of more "exact" methods in imitation of the physical scientists were the occasion either for mirth or for humorless rationalizations of the "essential otherness" of man. Immense masses of information were collected and called researches in the social sciences. Their general futility was rationalized by scholars who pointed out that the "laws of the social sciences" could not be laws but were only tendencies, and that in any case the information might be useful some day.

The failure of the experimental method in the field of human behavior was due to general ignorance of its limitations, as well as to the fact that the technique and terminology of the physical sciences, often purely imitative, were blindly applied without understanding the conditions necessary to success. The rapid development of statistics during the last fifty years also contributed to this state, since many people failed to understand that statistical significance is no guarantee that functional relations exist in phenomena. Thus, the use of statistical methods has in large measure been substituted for precise methods of observation, on the theory that counting noses is the essence of scientific method, whether or not there is any demonstrated relationship between variables. Fuzziness in definition is too often regarded as a guarantee of the unpredictable properties of organisms.

Briefly, the methods of the exact sciences can only be used where we are able to define relationships of functional dependence. All statements on relationships are of the general form $x = f(y)$, that is, a modification of one variable is followed by a modification of another. It is a matter of observation and an induction from experience whether such conditions of functional dependence exist in any field of investigation. Therefore, the first step in the development of a science is the definition of a class of phenomena possessing this characteristic. If this is not done at the outset of any investigation then there is every reason to believe that relations of functional dependence will never be discovered. The hopeful process of correlating everything in sight, under the delusion that significant values of coefficients will substitute for induction, is reminiscent of the well-known gentleman who got onto his horse and rode off in all directions. Even when statistical methods are not used, the failure to define precisely what one is talking about encourages a similar belief that, if only enough different methods and techniques are brought to bear on a problem, something is bound to turn up, a Micawber-like attitude too prevalent at the present time. The success of the natural scientists has been due to the obvious relations of functional dependence in such phenomena as falling objects, levers, the melting of substances, etc., and to the fact that in order to make use of objects in daily life, people developed methods of measurement to describe this dependence more accurately. The student of behavior, however, is not the inheritor of centuries of experience in dealing with people. Hence achievements in his field have waited until the methods of science have been made explicit. Results follow, once a successful definition is made of the class of phenomena, i.e., one which permits the quantitative description of the relations of these phenomena. The present definition of the interaction of individuals as a class of phenomena which can be studied by scientific methods will be elaborated in later chapters. But before taking this up, it will be useful to discuss certain aspects of the method of science, in particular those which must be held in mind once the class of phenomena to be investigated has been agreed upon.

It is a commonplace to state that science is the study of the relations between facts. But the implications of such a statement are not commonly considered. If we investigate these relations between facts, we must limit ourselves to statements about the inter-

connectedness itself, and we cannot derive from such descriptions any information as to the qualities which have been omitted. That is, we abstract from our observations only that which refers to the relation (how we do this will become evident a little later), and our scientific generalizations are based only on these abstractions. We cannot get out of our material anything more than we put in it in the first place, and any attempts to do so are necessarily illegitimate. A simple example will make this clear. When a crystallographer is describing the structure of any common mineral, say quartz, he assigns it to the hexagonal system on the basis of the length and inclinations of its axes. The abstractions which determine that the mineral belongs to this class of crystals obviously do not allow predictions about the color of the quartz, for the "facts" are limited to the length and the inclination of the axes.

It should be evident, therefore, that in science we are limited by the abstractions we select, which impose upon us the restriction that any explanation that we make of observed phenomena is only an ordering of these abstractions, which in turn represent the order of the facts. Scientific generalizations, then, are to be regarded as more or less convenient shorthand descriptions of the way in which events take place, and their mathematical form should not conceal the fact that it is to the relations of these events that they refer. What such a point of view means in the actual procedure of science will be evident from the following discussion, in which for the purposes of exposition we illustrate the points made by construction of a map.

Most of us are familiar with maps and have had occasion to use them in one form or another, but it may not be immediately evident how a map is constructed. If we take a map of any part of the countryside and go to the spot represented, we can begin to get a clear idea of the relation of the landscape to the conventionalized representation which we have with us. If the scale is large enough, we can see in detail such features as roads, houses, as well as hills, streams, and the more obvious landmarks. So in making a map, we are clearly enough dealing with "facts" in the external world. It is not for us as scientists to worry about the "reality" of the external world, since we are engaged in making a map, and the test of any map is whether it will get us to our destination. It is evident, however, that we are not dealing with facts by themselves. The red

barn behind the farmhouse, and the road just skirting the edge of the pond cannot be represented, in fact cannot be described in words, without placing them in relation to other features of the environment. By specifying that the barn is just behind the farmhouse, or that the road runs close to a pond, we are necessarily dealing with relations; that is, we are ordering facts in relation to one another. In any scientific endeavor to describe what is happening, it is necessary to put the things that we agree to study in relation to one another.

If we attempted to make a map without any better aids than the kind of description I have given you, placing things "close by" or "just behind," we should find that our map was a hit or miss affair which would inevitably lose us before we had gone very far towards any destination. We have, therefore, to introduce some kind of definition which will enable us to know as accurately as possible just what is the relation of the barn to the distant hill. In short, we improvise uniform methods of stating relationships. The use of uniform methods of stating relationships simply means that we are able to compare relationships by comparing the numerical values assigned to them. The uniformity here is that relationships are described in terms of units. This kind of definition is called measurement.

Now in making a map we are describing the relations of parts of the countryside to each other in terms of the measurement of distance, which is called length, and direction. These measurements must be expressed in some uniform scale, both for internal consistency, and to enable different individuals to use the same map. Without this precaution we should never be certain that another's definitions would tell us where a place was and how long it would take us to get there. So the purpose of the map is to enable us to predict that, if we travel in a particular direction for so many units of our scale of distance, we shall inevitably arrive at the expected place. If we carefully follow the directions of the map and come to an entirely different place, we must throw the map away as being a bad map which does not represent accurately the relation between the facts of the external world. A map is one form of scientific generalization; that is, it is a statement as to the way in which things happen, and any such generalization must always be adapted to fit the facts.

It is evident, therefore, that if science is concerned with the description of the relations between events, the first requisite of any science is the development of objective methods of definition of relationships. These definitions have to be of such a character that they will fit the phenomena of the external world and can be applied by anyone. This kind of procedure has been called the operational point of view by Professor Bridgman (4). By this term he means that the definitions set up to deal with the relations are descriptions of the operations one goes through in performing any kind of measurement, and they comprise the postulates, the fundamental assumptions of science. This way of looking at things will be clearer if we return to our discussion of the map.

If we want to measure the distance of one object from another, for example, the barn from the hill, we determine upon *some unit of measurement and apply it in a regular way to the phenomena which we want to measure.* As Professor Bridgman (4, p. 9-10) describes the process:

> We start with a measuring rod, lay it on the object so that one of the ends coincides with one end of the object, mark on the object the position of the other end of the rod, then move the rod along in a straight line extension of its previous position until the first end coincides with the previous position of the second end, repeat this process as often as we can, and call the length the total number of times the rod was applied.

In attempting to measure anything but a very small object, such a process is awkward and subject to a great chance for error. Aside from such obvious difficulties as carrying your measuring rod across swamps and up and down hills, the unevenness of the ground makes it almost impossible to follow the directions given above. So, in making a map, although one begins from a measured base line, a theodolite is used for measuring the angles between the base line and any distant object. As Bridgman points on page 14:

> In this extension we have made one very essential change: the angles between the lines connecting distant points are now angles between beams of light. We assume that a beam of light travels in a straight line. Furthermore, we assume in extending our system of triangulation over the surface of the earth that the geometry of light beams is Euclidean.

The point of all this is that if you define the relations between events in terms of the operations that you perform upon them, when you change the operations, for instance measuring by triangulation instead of by a rod, you have in fact changed your definitions of the relations. We may later find from experimental evidence that within certain limitations the measurement of length by the use of a measuring rod agrees with the results of measurements by the use of a theodolite, but we have no right to assume that such an agreement will take place, simply because the word *length* is used for both operations. In other words, confusion arises when we fail to define precisely what we are talking about. There are as many different kinds of lengths as there are operations for defining what we commonly refer to as length, and we should in common courtesy indicate the operational differences by the use of subscripts, referring to $length_1$, $length_2$, and so on. It follows that each term we use has to be defined with reference to our operations, and in scientific discourse, all words must have precise operational meaning.[1]

Furthermore, our operations involve certain assumptions or hypotheses about the nature of the material to which they are applied, and these assumptions must be made explicit in a precise definition of the operations.. In the above example, the assumption that the geometry of light beams is Euclidean is a part of and determines the operations performed. The usefulness of the result provides a check as to the appropriateness of our assumption. Given such limitations on our procedure, we cannot talk about the relations between facts except in terms of definable operations. Any other kind of discussion may provide occupation for philosophers, but such discourse is meaningless for the scientist. Unless we are able to refer to the way in which the facts are ordered, we cannot describe what is happening, and any opinions we hazard are therefore invalid for

[1]The precise use of language is very uncommon, and readers interested will find a careful account of semantic procedure, the ascertaining of meaning, in Ogden and Richards' work (15). By far the greater proportion of words is used for different (social) purposes, and the process of definition here is taken up in Chapters 6 and 7 of the present work. In other words, it is a mistake to assume that words without precise referents are "meaningless" when used in social discourse. They refer to interactions and frequently to highly complicated situations, from which their apparent vagueness derives. What writers mean by "meaningless" is that the referents are not well understood but are often highly personal or special to a small group.

lack of operations to support them. When we make observations we necessarily describe the events in terms of already existing operations, and new operations must be found when the old ones do not describe the facts accurately.

Our success or failure at the very outset, then, depends upon the usefulness of our operations. It is imperative, however, that we use some kind of uniform method of defining the relations between the events, and follow such a procedure consistently and consciously, whether or not our definitions are entirely satisfactory. If we do not do this, we shall very quickly become entangled in our own subjective evaluations, or in the contradictions implicit in describing the phenomena unsystematically. Such difficulties should be apparent to anyone. One has only to imagine attempting to make a map in which the scale varied in a haphazard way, so that the contour intervals contracted and expanded without warning, and the points of the compass were never the same from one part of the map to another. The result might be a convenient guide for the Mad Hatter, but our representations have to refer to what we call reality. Even more exasperating would be a map where contours, directions, and the rest were simply omitted, and places were put close together because they began with the letter *B*, or the cartographer had seen blue cows in them, or any other subjective reason whose only support was the feeling of the individual in question. So for the sake of others, a systematic procedure which is based upon definitions is of first importance.

Thus, as we proceed with our map-making, the operations which we have defined as ways of dealing with the facts determine the abstractions that we make. When you compare an actual section of the countryside with the map which represents it, you are at once struck by the detail left out of the map. Trees, boulders, shrubbery, which to the ordinary eye are the most obvious elements in the landscape, are missing, and aside from the representation of the form of the land by the use of contour lines, only such larger features as roads, rivers, settlements, and on very large scale maps, houses, are included. These are represented by conventionalized notations, indicating spatial position. Upon closer observation, it is evident that the fundamental discriminations are direction and distance, symbolized by the compass rose and the contour lines. So the selection of elements to be represented is dependent upon the operations that we have defined.

At the same time, what we select as our definitions depends not only upon what may be treated operationally, but also upon what is relevant to the phenomena which we have set out to investigate. This depends upon the initial definition of the class of phenomena that we are going to study. The determination of such a class is an induction from experience and must precede the selection of the abstractions, which are the definitions of the operations that it is convenient to apply. As an example, while we may be interested in representing the position of the barn in relation to the other parts of the landscape, we are not interested in its red color. There are operations which determine the color red, just as there are those which define length. But if we are interested in topographical relations and have recognized that we may observe relations between points on the earth's surface, we define our operations to be those of length and direction, and we exclude all others.

Once operations have been defined for any class of phenomena, we have achieved a most satisfactory stage in the development of a science. Such a definition is, of course, preceded by a determination of the class of phenomena itself, and is based upon it, but unless operations can be devised to treat the observed facts, the determination of the class has been incomplete and unsuccessful, and is destined to remain an untested generalization. The definition of the functional dependence of the "facts" on one another must be so phrased that the operations are ready at hand. Hence, it is unlikely that a successful definition will appear unless units of measurement are established. When this task has been completed, we are ready to begin the systematic description of the order of events. We are interested in this kind of description because it enables us to predict what is going to happen. It is the basic assumption of science that if the present order of events is known, we shall be able to state what the future course will be.

The generalizations or laws which express these uniformities in the ordering of events are given a mathematical representation, which means that a symbolic language has been developed to state economically what is happening. Mathematics is a method of abstraction based upon the operations already defined, and it deals with the combinations of operations which describe the phenomena observed. From the point of view of the scientist, mathematical representations describe combinations of numbers, and these numbers

are obtained as a result of the performance of operations on the phenomena under investigation. Thus, a mathematical formula represents certain observed combinations of relations, which are measured in number, or certain combinations deduced from such a basis, which again can be referred ultimately to the results of operations.

A science, in short, is composed of the conditions and laws which describe the order of the phenomena. These laws are formulated as equations based upon the results of measurement, that is, upon the results of the performance of certain operations. They are statements of the quantitative relationship of the operations which suffice, to a certain degree of approximation, to describe what takes place in the class of phenomena isolated. A science, therefore, is precise, abstract, and quantitative. It is hoped that the methods of analysis developed in this book will be of value in the development of a science of the interactions of individuals.

II. THE CLASS OF PHENOMENA

In any scientific investigation at least two steps must be taken. The first is to find out what you can study, and the second is to improvise ways of measuring the class of phenomena decided upon. In the preceding chapter we discussed very briefly the procedure in science called the operational method. We saw that we would have to decide whether a state of functional dependence existed or could be assumed to exist in the field of human relations. If this seemed to be the case, we had then to try to define the phenomena in such a way that operations, implicit in the definition, could be used to test our hypothesis.

In this work, we shall not go into any elaborate discussion to try to demonstrate the existence of a state of functional dependence in human relations. We regard this to be a hypothesis whose utility is abundantly demonstrated in our ordinary experience. When we remember that the functional relation of two variables may be described on a crude level by saying that it may be assumed if a change in the value of one variable is followed by a change in the value of another, we can see in everyday life countless instances of this sort of dependence, when the boss on a construction gang bawls out a worker who comes home after work and beats his wife and children; when a child, whose family life is punctuated by increasingly frequent rows between father and mother, runs away from home; when two people begin to snap at each other, interrupting constantly, trying to outtalk the other, and finally lose their tempers and fall to fighting; all these are instances in changes in relations of individuals fitting this definition of a functional relation. The literature of the various social and psychological subjects mentioned in Chapter I is full of such cases. But unless we can do more than recognize this state of functional dependence, unless we can actually turn our rough observations into precisely defined measurements, we stand little chance of describing what actually happens and making predictions which we can test. The major part of this monograph is devoted to developing methods by which this can be done.

We have already stated that the class of phenomena with which we are to be concerned comprises the actions and interactions of individuals. It is now necessary to give a more precise definition of what this includes. As a matter of everyday observation, we see individuals coming together, and from the evidence of what we see

and hear we unconsciously make certain judgments about their behavior. Such judgments are that one individual started to talk, and that the second individual to whom he was talking replied, and that both accompanied their speech with facial or bodily gestures. Even if three or four or a hundred individuals come together and we observe more complex variations on this pattern, we are still able to resolve what we see into words and gestures which have this character—that the actions of one individual are followed in some fashion by the actions of another. When we observe such events taking place, we have recognized what we may call interaction. It is evident that these events between people possess the "relatedness" necessary to the recognition of the kind of class of phenomena with which a scientist may deal.

Experience tells us, therefore, that interaction is made up of single actions manifested by individuals in propinquity or other contact. These actions are composed of muscular activities such as facial expressions, gestures, sounds, words, etc. They thus comprise the facts with which we have to deal. If we are to be concerned with the interactions of individuals, we may provisionally exclude from consideration any finer analysis than that which distinguishes a single action. The resolution of such actions into their elements, the investigation of the physiological mechanisms which combine to build them up, and the study of the relations of the internal environment of the body to the external environment, are the province of general physiology. With these problems we shall not be concerned. For in the whole field of investigation of the responses of animals to stimuli, we are selecting only one, namely the responses of animals (people) to stimuli which are manifested by other animals (people). Unlike other branches of biology concerned with the response of an animal to an external stimulus, the study of interactions is limited to the consideration of uncontrolled stimuli which are alternatively stimuli and responses. In the laboratory, the investigator isolates and controls the stimulus, and he is interested in the quantitative relationship between the fixed (controlled) stimulus and the response. In studies of interaction, we treat sequences of such stimulus-response situations in which the initial stimulus is manifested by one animal, but in which the response of the second animal may, and very frequently does, become a stimulus for the first. Except in selecting the first stimulus, the discrimination of the stimulus as the precursor of

a response is terminologically useless, since after the first, every response is in turn a stimulus.

Nor shall we try to include in the class of phenomena to be studied anything more than appears in the actions of the individuals that we observe. The method we are following proscribes our treating anything not objectively observed; we shall leave to others the inquiry into the feelings or general states of consciousness of our subjects. We do this not because we wish to deny the existence of other kinds of phenomena, but rather because, having adopted the operational point of view, we are limiting ourselves to study only that which we can develop operations to describe.

It is a common inference from observation that individuals "have emotions." These are concomitant with their actions, and we recognize intuitively the signs of these emotions in the individuals with whom we interact, as well as experience them subjectively ourselves. Much work has been done in the laboratory (5) on the physiological states which we call "emotions," but the operations used to establish these states are physiological, and cannot be applied to humans in interaction, except in rare cases. In the observation of human behavior, there are few, if any, completely indisputable signs of "emotions," as Carney Landis (10) and others have shown. Therefore, until operational methods have been worked out which allow us to deal with such phenomena, we feel justified in excluding them from a study of human interaction.

Furthermore, it is often a weakness in an investigation not to utilize as far as possible the advantages of a rigorous definition of the subject of investigation. For if the definition is a useful one, it should provide a means of describing the associated phenomena in terms of its subsidiary operations. Thus chemistry involves the study of a class of phenomena which may also be described by the operations of physics. That it is more convenient for most purposes to describe chemical phenomena with chemical operations does not mean that the chemist is unable to treat phenomena which a physicist also describes. Just as chemistry and physics are concerned with different aspects of the same phenomena, so physiology and sociology are similarly interrelated. In general, chemistry and sociology deal with relations between entities, in the former case the compound, in the latter the organism, while physics (here excluding mechanics) and physiology are primarily concerned with the effects of "external"

forces on the internal constitution of the separate entities themselves.

In other words, we should be able to describe in terms of the order of *actions and their quantitative pattern* much of what up to the present can only be dealt with physiologically. A necessary procedure in a physiological study of anger is to "make the animal mad." This involves utilizing the previous conditioning, for example, by thrusting a cat in a dog's face a number of times immediately following each other. Here then, a physiological description of the state of the dog "in rage" involves the sociological description of a series of events having a characteristic quantitative pattern *between two animals.* The physiologist is interested in the internal changes in the animal as a result of the series of events, and disregards the relation between the animals. The sociologist is interested in the order and the rate of the events between the animals. Both are describing in terms of their special definition of the class of phenomena, the phenomena that the layman calls "rage." Both are necessary in a complete description, just as both may stand by themselves as independent and useful accounts.

Definition of the Class of Phenomena

In order to obtain a satisfactory description of any class of phenomena, a precise definition of that class is necessary. A useful definition (in that we can derive our operations from it) is as *follows: Any overt muscular activity of an organism which involves* a change from its immediately preceding activity is to be regarded as an *action.* A *quantum of action* is the least discriminable unit of such activity manifested by an organism. A *unit of action* is that period of activity recorded from the initial change in muscular state until a second change brings the activity to an end. Each unit of action has a duration and may be regarded as made up of one or more quanta of action. When one or more quanta of action q_1 manifested by Individual *A,* are followed by one or more quanta of action p_1, manifested by Individual *B,* the quanta q_1 may be regarded as the stimulus s_1, and the quanta p_1 as the response r_1. Such a succession s_1r_1 will be defined as constituting *interaction* between the individuals *A* and *B.* Should Quanta p_1, manifested by Individual *B,* be followed in turn by one or more quanta of action q_2 on the part of Individual *A,* the quanta p_1 would then be regarded as stimulus s_2, the quanta q_2 as the response r_2, and so on.

For the purposes of abstraction, any succession of units of action of the character q_1p_1 or p_1q_2 will be treated as a *unit of interaction*. Any continued series of units of interaction, made up of a succession of units of action, q_1p_1, $q \ldots q_n$, constitutes an *event*. An event, therefore, is the period from the beginning to the end of observed interaction, whether it is made up of one unit of interaction or a series.

The Origin of Action

From this definition, it is evident that we may describe the interaction of two individuals in terms of the order in which they act. That this is of importance can be seen from a consideration of the distinction in interaction between stimulus and response. Given two individuals, we observe that one of the two manifests the first unit of action which is then followed by a unit of action manifested by the second individual. The first unit is regarded as the stimulus and the second unit as the response. The distinction between the two is that the first action is not preceded by an action of the other individual in the second pair. It may be regarded, therefore, as an origin or initiation of action to which the action of the second individual is the terminus or response. The relation between *origin of action* and *terminus of action* is thus asymmetrical, unlike all the following units of interaction in the event, since the first action in the first unit of interaction is not preceded by a previous action. We shall regard the order between the two individuals as determined by the order in which they manifest action in the first unit of interaction, and the succeeding course of the event to follow from that initial order.

Thus, a sociological description of the relation of the two animals involves a different situation if, outside the laboratory, the cat originates action successively for the dog, or if the dog chases the cat. Or if at the beginning the dog originates by chasing the cat, and after a succession of events, the cat turns on the dog and originates for the dog. Here the sociologist describes the rate of the events in time, the distribution of the origins and termini between dog and cat, and achieves a precise description of what happens. The physiologist's description (which could only be done in the laboratory) would vary with the origins, termini, and the rate of occurrence. He would describe the physiological concomitant of

the successive termini of the cat as "fear," the origins of the dog as "aggression," the change from termini to origins of the cat as "rage," and the turning tail of the dog as "fear." Either description is adequate. As stated before, one supplements the other; but each can be pursued independently.

The origin of action is a manifestation of spontaneous or semi-spontaneous activity on the part of the organism. Although generalized here, it has been widely utilized in animal sociology under specific titles such as pecker-peckee relationships in bird hierarchies, etc. (1, 2), and independently in the observational studies of Thomas, Beaver, Loomis, Arrington, etc. (22, 23), on children (with which we became acquainted after developing our own concepts). In Chapters IV and V, we shall utilize the operation of determining the *origin of action* as the chief means of describing hierarchical order systematically.

Definition of an Event

Although an event is defined as that period from the beginning to the end of the observed interaction, when we attempt to apply so general a definition to the actions of individuals, certain difficulties immediately present themselves. For example, let us suppose that Individual *A* is seated in a room, reading a newspaper, and Individual *B* enters the room and speaks to him. *A* looks up from his newspaper and replies, and they continue to talk for a few minutes. It is evident that we have observed interaction in an event, and we regard an event as starting with the first action on the part of one individual, followed by an action on the part of a second individual. In order to determine the first action from which the event may be said to have begun, we wish to determine the origin of action. It could be argued that the first action was that of the man sitting reading the newspaper and that this was stimulus for the action of Individual *B* who enters the room. On the other hand, without considering how we know, it seems evident that the origin of action was manifested by the man entering the room who spoke to Individual *A*. Like all such intuitional judgments, this leaves us in a dilemma, unless we can make explicit the actual discrimination upon which we determine the origin and hence the beginning of an event. Otherwise, some unkind person with a gift for controversy will come along and tie our implicit judgments into knots.

In order to determine what actual discriminations are necessary in order to define the beginning of an event, the end of an event, and so on, it is necessary to look a little closer at what we are attempting to define. In other words, when we speak of interaction, what precisely are we describing? Let us examine a unit of action and see exactly what we mean by that term.

If an individual is observed when he is alone, his behavior will be seen to be made up of a continuously changing set of muscular patterns (quanta). If we fix these changing muscular activities by using a motion picture camera, we shall be able to observe how these motor patterns flow into each other even though they may be separated into discrete elements if the camera we use is fast enough. This is easily understood if the reader has ever seen slow motion pictures. A continuous record of the behavior of an individual will give us a series of patterns which are separable one from another, even though it is clear how one is transformed into the next.

Suppose we now put two individuals in the field of the slow motion camera and note what happens. We first observe each individual acting by himself, and we see that that action is made up of continuous modification of motor patterns and relatively abrupt (discriminable) changes from pattern to pattern. Thus, a man who is sitting down may stand erect, and so on. When we state that now interaction is taking place, we base this statement upon our observation that one of our individuals changes his motor pattern and that change is followed by a change in the pattern of the other. In other words, we see that after one individual changes his previous motor pattern and adopts a new one, and the other individual still is maintaining his previous condition, if then the second individual manifests a changed pattern immediately following the change in the first individual we have what we have previously defined as interaction. The change in action pattern of the first individual, in our example, from walking into the room to speaking is followed by a change in the motor state of the second individual who up to this time had been continuing in a single motor pattern of reading the newspaper. Therefore, the change in action pattern from State 1 to State 2 of Individual *B* determined the origin of action, and the event began with that change. A schematic diagram will make this point clear (Figure 1).

The same discrimination may be used to determine the end of an

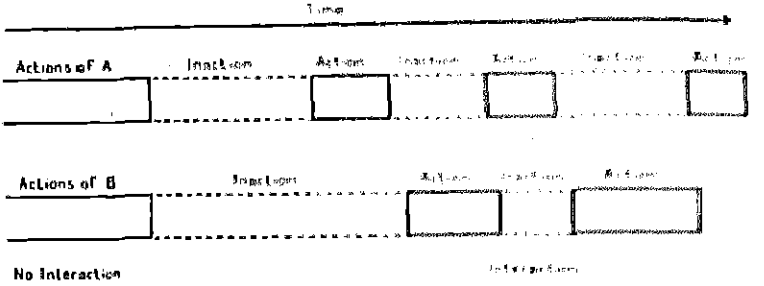


FIGURE 1

event. If an action of Individual *A* is not followed by an action of Individual *B*, and that action pattern is changed into another action state which in turn is not followed by an action of *B*, then we regard the interaction as ended.

Sometimes more than two individuals are in interaction, and it becomes necessary to determine whether we have one or more events. The same discrimination may be applied in this case. Let us suppose that we have three individuals *A*, *B*, and *C*. If *A* speaks to *B* and *B* to *C*, we have two pairs in interaction, and each pair makes up a separate event. The reason for this is clear. When *B* speaks to *C*, *A* is no longer in interaction with *B*, and *A* by falling silent has adopted a new behavior pattern. Each time, therefore, that one of the individuals is no longer in interaction a new event takes place. Thus, if *C* spoke to *A*, and the sequence then repeated itself, each unit of interaction would be a new event. It is readily apparent that where there are more than two people present, we may have a large number of events, generally of short duration.

The only case in which several people may interact in one event is that case in which one person is the origin of action and several respond. This is of the same character as our pair definition although there is more than one individual terminating action. If after the response of several people, however, Individual *A*, the origin, interacts with *B* and not with *C*, then a new event occurs between the members of the pair *A* and *B*.

If the reader will turn to Appendix *A*, he will find three examples of observed interactions. They are inserted to illustrate the definitions and discriminations given in this chapter. In these three cases, it is immediately evident that a number of units of interaction may

be distinguished, each made up of units of action, which together combine to make up events. In the first and third cases, there is only one event recorded, while in the second case there are several. By abstracting the units of interaction from the material, we are able to make objective statements to the effect that one individual manifests an action which is followed by the action of another individual, and we can go on distinguishing such actions no matter how long the individuals are together. If we do this, the incidents given in Appendix *A* may be reduced to a very simple order. Taking the first instance only, the description goes as follows: An action (*words*) on the part of the principal is followed by an action (*words*) on the part of the pupil. This is in turn followed by another action (*words*) manifested by the principal, an action (*laughter*) by the pupil, and an action (*words*) by the principal, followed by an action (*words*) by the pupil, and an action (*words*) by the principal, and a final action (*going out the door*) by the pupil. A similar analysis can be made of the other examples.

It will be noted that we made no statement about the actions in the above instance, except that they were manifested by particular individuals in a particular order during the course of the interaction. We do not attempt to deal with the different things said, or to classify the actions on such a basis. The examples given, though recorded in the same community, are quite different both in the kind of situation and the number of individuals involved, but by the process of abstraction we have omitted everything except that which is being studied, namely the units of interaction.

In the second case given in Appendix *A*, there is a more complex situation, since with four people involved it is probable that there is more than one event. In order to determine the number of events distinguishable, let us first abstract the pairs of individuals between whom interaction takes place. They are in the following order: The Irishman and the observer; the Irishman and the woman; the Irishman and the observer; the Irishman and the woman; the man and the woman; and finally, the Irishman and the observer. All but the first of these interactions take place within the house, and there are four people present. How many different events may be distinguished?

By definition, the end of an event is recorded when the individuals no longer manifest units of action which follow each other in time.

rates at which others act. For example, where there are two persons in interaction, one whose actions are quick and speech voluble, and the other, slow and given to long, well-rounded periods, we are apt to find that the speedy one keeps interrupting the slow one, jumping in when the other pauses, and so on. If the slow individual is persistent, he may finally wear the other down, and our fast individual will subside into silence broken with a few "impatient" or "bored" remarks. Or conversely, the speed at which the fast person acts may so upset the slow individual that it will throw him off his stride and he will later confess that he thought the other person "hard to talk to," "never stuck to the subject," "always interrupted."

A measure only of the duration of an event, or the mean duration of all events between members of a pair tells us nothing about this variation, not because the method of performing the operation is inaccurate, but rather because it is inadequate for describing a very complicated situation. Since the rate at which people talk varies so much, we shall calculate the mean duration of a *single action* in the event both for Individual *A* and for Individual *B*. This gives us a description which begins to focus on the internal variation of the event rather than the mere measure of the duration of an event. From this measure we may also ascertain the mean duration of a unit of interaction and thus get some idea of the rate at which the interaction takes place. But as a matter of experience, we know that even an average of this sort is not a precise statement of what happened. A scientific description should give us as accurate a representation of the interactions as possible, and if a person talks a great deal at the beginning of an event, and then becomes gradually silent, the average duration of the actions furnishes a misleading picture of the facts because of its overall character.[3] We intuitively feel that rates vary widely during an interaction: we get along well, or we fight, we are uncomfortable, or bored, and so on. Our description must try to represent the phenomena to which these statements refer.

For statements such as these, and the feelings that we possess and try to express, represent the reactions of the organism to other

[3]Other statistical constants have certain difficulties in their applications due to the fact that the distribution of the times of units of action is J-shaped.

organisms. They are "emotions" and represent a physiological problem. We have already discussed its implications in describing the interaction of cat and dog in the "rage" situation, and we saw how these results may also be given a sociological description. The existence of these "feelings" indicate that where there is something which may be regarded as physiological, there are also to be found sociological phenomena. It may be objected that we are omitting what people say, the symbols to which we have all been conditioned, and in truth we are, although later on we shall discuss the interpretation of symbols and their relations to the phenomena we are now discussing. As we explained before, we omit them because we have no operations to deal with them, and because we shall find that the quantitative analysis of interaction will in large measure describe such phenomena. In operations describing the timing of actions and events, we hope the reader will discover a useful and highly supple instrument. If the reader sharpens his powers of observation, he will see that in many cases people whom he does not like or cannot get along with, *say* exactly the same things that the people he does like say. So actors frequently take a short play, play it first as a tragedy and then, using the same words, play it as a comedy. Here the language is seen as unimportant, and the timing is the factor which makes the difference in its effect on the audience. The same observation may be made by anyone who has travelled in foreign countries. When people speak a language unknown to the traveller, he has to make judgments solely on the basis of their actions, and often they seem more accurate in revealing indications of character than those made under the added confusion of interpreting the meaning of words.

Timing in Events

In order to be able to obtain measurements of the interaction of individuals, we have developed recording devices which gave us an accurate account of the durations of actions and inactions within events. The first apparatus used was very crude, and consisted essentially of a typewriter through which a moving paper tape was driven at a uniform rate of speed. An observer, seated at the typewriter, struck a key at the beginning of each action of each person and the distance between the letter assigned to one person and that of the other person was measured and translated into seconds by knowing

the rate at which the tape travelled. The results obtained with this instrument have already been published (7), and may be referred to for details, although some of the conclusions will be discussed here.

This recording typewriter was improvised to discover whether this method could be pursued with profit, and once we were able to demonstrate significant uniformities, a more accurate instrument was built. This consists of a moving tape driven at a speed of five inches a minute, on which lines are drawn by continuously-moving self-inking wheels. Each wheel is attached to a lever put into action when the observer presses a key which lifts the recording wheel from the paper. When an individual acts, the observer presses the key assigned, holding it down until the action ceases, and the blank space on the tape records the length of the action. The length of the inked line gives us the length of the inaction. Each key works independently of the others, and we are thus able to record when two or more individuals are talking or silent at the same time. There are six keys, allowing us to record six people at one time.

When we observe two individuals in interaction, their actions or inactions may or may not overlap at any given time, but there are nevertheless four possible measures that we can obtain. (*a*) Individual *A* talks or acts and Individual *B* is silent. (*b*) Both talk or act at the same time; for convenience we call this a double action. (*c*) Both are silent or inactive; this we call a double silence. (*d*) Individual *B* talks or acts and *A* is silent. It must be remembered that we record both speech and non-verbal actions such as nods of the head, gestures, and so on. Furthermore, it should be obvious that we cannot only record the occurrence of a double action or double silence, we can also tell which individual interrupts in the former case, or which person remains silent when the speaker ceases acting.

Moreover, we can also obtain a record of the duration of each action and its succeeding inaction for each individual. This allows us to examine the individual's alternation between action and quiescence to see whether there are uniformities in the sequence. These can then be related to the record of the *interaction*, whose four categories we described in the preceding paragraph. The record for the individual could, of course, be obtained by measuring the

values traced by the key for each individual, but a simpler method is to pass the tape under a transparent scale and read off the values of the interacting pair; *A* acting, *B* silent; double action; double silence; *A* silent, *B* acting. Using this record as a base, we may then quickly obtain the durations of actions and silences for each individual by adding sequent actions and double actions for each individual and in the same way, sequent silences and double silences. Thus if Individual *A* starts out and talks for three seconds at which point *B* interrupts and they talk together for two seconds, whereupon *A* falls silent, the action of *A* is five seconds. By getting the record for each individual by this sort of addition, we avoid having to measure the tape two extra times.

Once we have obtained a record of the interaction of two individuals of the sort described above, we must work out methods of testing for relations of functional dependence. Two methods can be used. The first involves treating a sequence of events as measures of the relation of two individuals. The second depends upon an examination of the changes that take place in the values of actions and silences within each event in order to see how two individuals adapt to each other. Combinations of these methods can also be used.

A simple instance of the first sort of method is provided by calculating the ratio between the means for Individuals *A* and *B* in a single event. In the following table (Table 1) we present

TABLE 1

Observation No.	No. of units	Date	Mean of *A*'s units of action	Mean of *B*'s units of action	Mean of units of interaction	Mean *A*/ Mean *B*
9	203½	4/27	4.04	3.54	7.58	.5329
11	162½	4/28	5.39	3.99	9.38	.5746
21	335½	5/17	3.92	3.02	6.94	.5648
24	214½	6/ 1	5.22	4.25	9.47	.5512
26	211½	6/20	7.81	3.88	11.64	.6666
27	274	6/20	5.49	4.33	9.82	.5590
29	291	6/22	3.10	2.89	5.99	.5175
30	278½	6/22	5.05	3.62	8.67	.5824

a series of means obtained with our first recording apparatus on two individuals. It will be seen that the values of the means differ. On some days the interaction was much faster than on others. In

spite of this variation in speed, the means bear a consistent relation to one another. With the exception of No. 26, the ratios are all close to each other, and the first four are well within the limits of variation imposed by the number of units of interaction. But No. 26 is out of line and there is greater variability in the last three values than in the first four. In the first place, it must be pointed out that No. 26 occurred almost three weeks after No. 24. During that time, the members of the pair had not seen each other, since Individual *B* was away on vacation. Although the same length of time elapsed between Observations 11 and 21, the cases are not comparable, for in the latter case interaction took place every day during the intervening three weeks. The evidence would indicate that the break in the relation increased the variability of the adjustment as measured by the ratio of the means. We would infer, therefore, that a constant or approximately constant ratio indicates a stable relationship. Other series of observations, obtained with the apparatus, indicate this to be the case.

The same conclusion can be drawn from a variety of cases obtained from records made with the new apparatus. Here the situation is complicated by the fact that the record includes the actions and inactions of *A* and the actions and inactions of *B*. Moreover, we also possess information on double actions and double silences. If there are no double actions or double silences, the actions of *A* are the silences of *B* and vice versa. But ordinarily such simplicity occurs only for short strips of a record. By utilizing the relationship of the actions of one individual to the silences of another, we get a quick description of the degree of adjustment. Each observation is broken up into uniform intervals, say one or two minutes, and the mean action of *A* for the period is expressed as a function of the mean silence of *B*. If there are no double actions or silences, the points will all fall on the diagonal having the slope of 1. Ordinarily, they group on one side of the line or the other, indicating either that the double actions or the double silences predominate. The spread of the points indicates the degree of adaptation and whether there is greater agreement at the higher or lower values.

An equally simple measure is obtained by calculating the ratio of the sum of the double actions to the sum of the actions in two-minute intervals and determining the amount of variation in the ratio that occurs. The greater the variation, the greater the swing between

low double actions and a large number, and such a high spread indicates that at one interval of two minutes the individuals adjusted perfectly, while at other times they were continually interrupting each other. In a series of observations made to study how two individuals who did not know each other learned to adjust, it was found that this variation increased progressively until it became stable. If two individuals had known each other for some time, however, the index of variation remained stable from the first to the last observation. The explanation seems to be from other evidence, which cannot be discussed here, that each individual has a characteristic and repetitive rate of interaction, which is inhibited in first interacting with a new person. Once he "gets to know him" the inhibition of his normal action rates, which reduces the number of times and the amount that he interrupts, decreases, and the double actions increase. At the same time, he also adjusts his rates more easily for short periods, and doesn't interrupt inadvertantly. With greater or less rapidity, depending upon the rate of the other person and the frequency of the events, the two individuals tend to approach a stable relationship.

One final measure of an event may be mentioned which can easily be used in investigating the relations of individuals without necessary recourse to an analysis of the changes in the interaction during the course of a single conversation. This involves the use of the description of the whole population of the duration of actions or inactions as the case may be. If frequency distributions are constructed for each individual's actions and silences in each observation, it is found in all cases that the distribution is J-shaped, and may be fitted by the exponential equation, $F = ae^{-bT}$, since a plot of log F as a function of T gives us a very close approximation to a straight line. In many cases, a clear discontinuity with distinctly less slope occurs in the neighborhood of $T = 12$ seconds, attributable to the tail of the distribution, which can be fitted by the same equation. The calculation of the slope or slopes of the distributions gives us parameters which may be used to describe the variability of the pair by getting the standard deviation of the frequency values for each time interval, or they may be plotted against the values of the slopes of the other person. The consideration of these points will be taken up in other publications where the data can be published in full.

Action-Inaction Rates

Instead of considering the overall measure of the actions and inactions in events, we may wish to see what progressive changes take place within an event as a result of the adaptation or failure to adapt of two or more individuals. That means that we have to develop methods of measuring such changes, if they occur, and discover what uniformities seem to be operating when two people are in interaction. It should be evident, however, that we must not expect any simple connection between particular values manifested by Individual *A* and particular values on the part of *B*. In other words, we do not find in our observations that each time Individual *A* manifests a ten-second action that *B* responds with a five-second action, and so on. Nor will a scattergram of paired values give you a line of central tendency because single values are not associated. If the coefficient of correlation is calculated for the actions of *A* and the actions of *B*, the value of the coefficient is an approximation to zero. This holds true even for first differences. This does not mean, however, that there is no relationship between the values of *A* and *B*, but rather as Yule remarks: "It does not follow, however, that if r is zero the variates are independent; the fact that r is zero implies only that the means of the arrays lie scattered around two straight lines which do not exhibit any definite trend away from the horizontal or vertical as the case may be" (25, p. 212). If we are to find out whether the values for two individuals are functionally related, we shall have to develop a way of treating series of values within any event. The first thing to do is to plot the occurrence of actions as a function of time.

In so doing, we discover that the curves obtained, roughly fitted by empirical procedures, resemble complicated sine curves in which the frequencies vary periodically as a function of time. There are certain technical difficulties about these curves which cannot be dealt with here, but one obvious trouble is that the graphical method is very laborious. The point that we wish to bring out here is that whether or not these curves are true sine curves, they at least indicate very clearly that the values are repetitive. Moreover, it is also clear that the curves of the same individual bear definite resemblances to each other in the pattern that the values form. For these reasons, it is evident that some method has to be devised to treat this oscillation of values within an event. In the paper earlier referred to,

one of us devised a simple method by which this can be done in a first approximation (7).

The actions of each person were summed for each five units of action, and these sums were plotted on a cumulative graph. The number of actions were plotted on the ordinate and the sum of the actions on the abscissa. Both ordinates were cumulative. By the method of selected points, these curves were broken up into series of straight lines or slopes within which we regarded the variation as constant. Examination of these slopes showed that in a large number of cases (the exceptions could be dealt with as will be seen later) there was a consistent alternation between fast and slow values. This result, obtained by a kind of averaging method, is directly comparable to the results secured from plotting the actual values as a function of time, although it is necessarily a much cruder procedure. Quotations from the published report will make the rest of the analysis clear.

> When log slope is plotted as a function of this ratio (the sum of the durations of *A*'s slopes to the total time) for all the slopes manifested by one individual in interaction with another individual, it is found that the points representing the

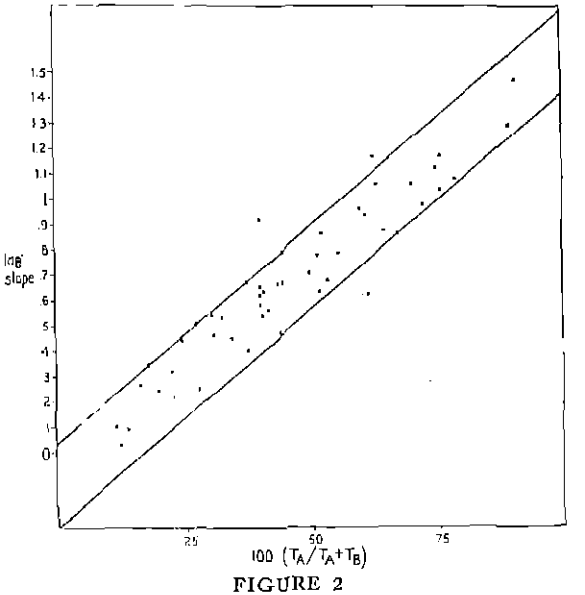


FIGURE 2

relationship make up a band. The band has a constant width and may be enclosed by two parallel lines fitted to the points making up the border. The figure represents the band of *GB* with *EDC* (Figure 2).

When the bands for the three pairs discussed here were plotted, it was found in the equation

$$\log S_A = k(t_A/t_A + t_B) + \text{constant}$$

where S equals the slope, and A and B are the two individuals, and t the sum of the durations, that the constant describing the slope of the band was the same for Individual *EDC* in the three pairs in which he interacted, differing in slope from the bands of *GB*, *CMA*, and *FLWR*, who also differed from each other. Unfortunately we were unable to obtain a sufficient series for the other individuals with each other, but it is an obvious possibility that the constant k in this relationship is invariant for each individual. . . .

What precisely does the band function tell us? In the first place, it is evident that the function imposes limits upon the duration of any single slope. If Individual *A* manifests a slope of a particular value, and *B* manifests a slope which does not bring the value of the ratio within the limits of the band at the given value of log slope for *A*, the Individual *A* will maintain this slope, until other slopes manifested by *B* bring the ratio within the band limits. Thus, the duration of a slope at a given value is determined (within certain limits) by the proportion it makes with the total time. For the different individuals with whom *EDC* interacts, however, the band for the function has a different width, and it is suggested that the width of the band, and the distribution of points within it is a measure of the degree of adaptation of the individuals to one another. . . .

It should be pointed out that the limits of the bands cannot properly be regarded as defining the probability that repeated measurements of log slope as a function of the ratio will fall within the band instead of outside it. We shall come upon such a function a little later in this paper. In this case, however, the situation is more complex. If a band encloses the values of the function for each conversation, it will be observed that the width varies from day to day, although the slope remains constant. In some observations, all the points fall on a straight line; in others, points forming both borders of the total band are included in a single observation. The question of probability, then, involves the distribution of the variation for single

observations. The limits of the band for all observations on a given pair define this probability. The view that the probability distribution is made up of bands for single observations is supported by the fact that the limits of the band do not act as limits which rigidly control the change of slope. That is, when Individual *A* changes to a certain slope, the first slope of Individual *B* may bring the ratio within the band limits. That Individual *A* does not shift depends upon two factors: (*a*) the existence of minimum and possibly maximum durations for slopes, the former giving a kind of threshold effect, the conditions for which have not yet been investigated; and (*b*) the limits of the variability defined by the width of the band in a single observation. In this latter case, the variation in width of the bands is an expression of the variation in adjustment of the slopes of one individual to the slopes of the other, and hence depends upon the variability of the constituent individuals.

Each individual is regarded as alternating between fast and slow rates. Although the values of these rates vary in a single conversation, the ratio of each fast rate to its accompanying slow rate is constant for the conversation, but varies from event to event.

Deviations from this pattern occur in more than half the cases. It is shown, however, that both representatives of the pattern (calculated) and its deviations vary in a uniform way. If the mean of the slopes of each conversation is calculated and its standard deviation, it is found that log — slope = k(log Mean slope) + constant, with all the points falling within a band of constant width. This relationship was the same for all observations of four individuals. It was then assumed that deviations could not be due to individual differences in variability as measured by this function.

It was then shown that deviations were in all cases preceded by slopes maintained over a period of time due to the operation of the suggested uniformity governing the duration of slopes at different values.

Although more complex methods of analysis can be developed, particularly as a result of the new apparatus and the record of double actions and double silences, the fundamental points enunciated in this article still seem to hold. Further consideration of these points would take us outside the scope of the monograph, and they will be discussed in an account of observations with the new

apparatus now being prepared for publication. But in any case, it can be seen that by studying the changes in the sequence of values within an event, we obtain a consistent picture of the interaction of individuals. We shall now take up a different kind of measure which can be combined with the measures just discussed. We refer to the quantitative description of series of events.

Sequence of Events

Everyone knows from his own experience that the events whose internal quantitative pattern we have been describing have a characteristic distribution in time. In the family, when the parents arise in the morning, there is a sequence of events in which they interact with each other, get the children up, dress them, prepare breakfast, and see that they eat. Every day, after about an equal amount of interaction within the family, the father dashes off to get the 8:17 train where he interacts with the conductor, his fellow commuters, etc., in a more or less repetitive way as measured by the number, frequency, and internal pattern of the events. Once at work, whether in office, store, or factory, each individual interacts more or less with the same individuals in much the same amount within known and expected limits. Such sequences of events between individuals occur for everyone with greater or less uniformity. Even in those situations in which the regular round is disturbed, where we get angry and lose our tempers, where we go to a party or a funeral, we recognize again a similarity in timing and occurrence that makes one fight more or less like the next, or one funeral like another. These uniformities, then, both regular and variate, are the facts the relations of which we now wish to describe. They are uniformities in the temporal distribution of the events whose interaction rates we have seen to be associated in a lawful way.

Origin-Terminus Ratio

In outlining the operations that can be applied to events as they occur in time, it is obvious that in any given period for two individuals we can reckon the average number of events that occur. Some pairs will then be distinguished from others on the basis of different values for this average. But like the average duration of an event discussed earlier in the chapter, such a discrimination is too gross to obtain a useful description of the phenomena by its

use. Even though the mean number of events per week is the same between our commuter and his boss, and between the commuter and his neighbor with whom he rides into town every morning, not only is the quantitative character of each event different, but also the occurrence of these events in time. With the fellow commuter, all the events take place in a limited time, there may be easy give and take (origins equal termini approximately); with the boss, the events are scattered over the day with a constraint due to the one-way character of the origins of action.

We have already described the process of determining the origin of action, which simply means that we establish which of two persons was first to act in an event. We have seen that the determination of an origin may be used to characterize an event. From observation, we note how different people have different rates at which they originate action. We all know cases of "bashful" people who will never speak unless spoken to. If spoken to, they very frequently turn out to be lively interactors. On the other hand, the "glad-hand artist," the "greeter," the man who speaks to everyone is a man with a very high origin rate. Everyone can think of people who are particularly noticeable either by the frequency with which they originate or terminate. Many people go to great lengths to manœuvre themselves into positions in which they will either be able to speak or be spoken to. This characteristic is common and easily determinable. We shall, therefore, describe relations between individuals in terms of the ratio between origins and termini. For convenience, we shall reduce such a ratio to a single scale by using the ratio of the origins to the sum of the origins and termini (i.e., events), and we shall speak henceforth of the origin ratio, it being understood that by subtracting the origin ratio from 1.000 we get the terminus ratio. We can characterize individuals as possessing low or high origin ratios as the case may be, and define this quantitatively.

The calculations of an origin ratio demands that we secure an adequate sample of interactions of an individual. (The necessary criteria are a technical matter which are discussed in other publications.) It is sufficient to point out that the evidence shows that these ratios for individuals are frequently constant over considerable periods of time. We can calculate origin ratios for individuals (totals), and they may also be determined for all the pairs in which

an individual interacts. In the latter case, the sum of all the separate values for pairs equals the origin ratio of the individual. In institutions studied by these methods, it is a common thing to find that there are variations in rates for the members of pairs although the individual's ratios are constant. The significance of this will be discussed a little later.

Not only are individuals characterized by constant ratios, but they are also found to have characteristic distributions of origins and termini in time. Some individuals originate action in series, others may terminate two or three times successively. The occurrences of such sequences of events indicates that the origin-terminus ratio is only of limited use in description. If any group of individuals is observed for a short time, it will be noticed that one individual is quite different from another in this respect. Yet even if one man tends to follow every terminus that he makes by a group of three events in which he is origin, we will not find such a sequence in every pair in which he interacts. With certain individuals, he may terminate more often than he originates. But in any case, the order of action of an individual in events is in general repetitive, and the events making up this order are allocated in a uniform and repetitive way among the members of the various pairs with whom he interacts.

Not only does an individual have relatively constant interaction rates as determined by the distribution of origins and termini, but also he is observed to possess measurable differences in the duration of events, the duration of the inaction between events, and the amount of interaction in which he takes part. Some individuals habitually interact in events lasting a comparatively long period of time; others are characterized by short events with a short duration of inaction before the next one begins. If a frequency distribution of events (duration) is made, we find that it is fitted by the same question as that which describes the frequency distribution for durations of actions and silences, namely $F = ae^{-bT}$. This is based upon a series of observations in a shipyard lasting over several months, now being prepared for publication by the author and Mr. F. L. W. Richardson, Jr., as well as upon random samples in other institutions.

In treating sequences of events taking place between members of a group of individuals, it is necessary to develop a method of handling the interaction of a number of interdependent pairs of individuals.

Such a method will be outlined in the next two chapters. Here it must be pointed out that the analysis of the events as they occur between individuals must necessarily be combined with the study of the internal character of events, the quantitative description of rates of interaction dealt with earlier in this chapter. Unless this is done, we cannot describe the changes in frequency of events, the increase of origins of action, and the decrease in time between them which mark a period of upset in the relations of individuals. To understand these changes, we must now discuss certain general considerations of first importance in formulating a theory of the behavior of the organism. This involves the theory of equilibrium.

EQUILIBRIUM

An approximate definition of equilibrium is that state of a system to which the values tend to return after a small change or disturbance impressed on the system has been removed. A simple example of such a disturbance may be observed anytime if you happen to be a member of a small group talking animatedly together in a room, and a strange person comes in to ask one of the members about some affair known to the two of them. A hush descends upon the room, and conversation is sporadic and between pairs until the stranger departs, at which point the discussion becomes general again. If the disturbance is more protracted in duration or more severe in that it breaks up relations having a high frequency as in the crises of life, marriages, deaths, losing a job, joining an organization, strikes, and so on, the reaction for the individuals concerned may be more severe. In many of the phenomena already discussed, we have found situations in which we could profitably introduce the hypothesis that we were dealing with systems in equilibrium. The first instance where this kind of description could be introduced was in the series of ratios describing the relations between the individuals in Table 1. We found here that the ratio between Individuals *A* and *B* remained constant from April 27 to June 1. This represented a period in which interaction took place, on the average, every day. There then occurred the vacation period during which there was no interaction, and the first interaction after the return was recorded in event No. 26. It was evident that here Individual *B* had become adjusted to other rates, and the relation between him and *A*, described by the ratio, indicated a minor dis-

turbance of the system (in this case the relation of *A* and *B*). In the second event on the same day, the old established ratio manifested itself, and the system returned to its previous state. That it had not achieved final stability is shown by the observations on the next day. How long the oscillation would have lasted before equilibrium had been attained is unknown, since *B* went off for the rest of the summer and no further observations were possible.

A second instance may be selected from the evidence given in the consideration of a sequence of events. In this case, we noted that individuals possessed constant rates in the origin ratio, and that they also had characteristic patterns in time of origins and termini. It is frequently to be noted that a given individual will have his ratio disturbed on a given day, for such reasons as a series of origins by individuals outside the members of the group with whom he commonly interacts, but as a matter of observation that ratio reasserts itself on the following day. We are at present investigating how long it takes before a disturbance is no longer followed by a return to previous values. In the same way that the origin ratio varies, we have observed how a change during a given period produces a minor disturbance.

For example, in the shipyard study which is being prepared for publication, it is frequently noted that one of the carpenters, *P*, is characterized by a string of events in which he originates action for *S* and *R*. In checking over these cases, it was found that each time this happened he had just before terminated action for the foreman. After such a sequence, he returned to his ordinary rate of about 1½ to 1 (origins to termini). Apparently, the sequence of origins represents the compensation in the system (in this case of the individual) before it returned to its previous state.

The application of the theory of equilibrium to interaction necessitates two assumptions which have to be tested in observation. The first is that within definable limits, the relations of individuals are constant. The second is that an individual or a group, regarded as a system, returns to these constant values after the impressed force is removed. This latter condition does not obviate the fact that a stronger force or one lasting for a long period of time may enforce a change in the state of the system, and form a new equilibrium. But this new state will be constant in the same way that the previous state was observed to be. Future research will have to

define the conditions of equilibrium for individuals and groups, that is, what the quantitative characteristics of the state are, how severe a disturbance will upset the equilibrium and necessitate the formation of a new state and so on. It should be pointed out that we already have a few methods of describing the limits of variation within which a relation may be regarded as constant. The ratio of the means, the percentage double action to total action whose variation becomes constant, the band limits of the spread coefficient for each event, the slope defining the adjustment of the actions and silences. Even in treating events simply in terms of origins and termini, less refined observation gives us similar instances. Where an individual has a high origin ratio, the increase in termini due to an outside force brings about a compensatory increase in origins of action.

In many other cases, a more equal relation between origins and termini is to be found, and it is here postulated that the free state of an individual, regarded as a system, is one in which every origin is balanced by a terminus. This is confirmed by observations on children in which this situation tends to prevail, even though certain exceptions have a much higher rate of origins or termini as the case may be.

Where disproportionate ratios appear, we postulate that this is due to the previous interactions of the individual. For example, a child brought up in a family where both parents originate in a high number of events to it will be found to have a gradually developing asymmetrical ratio in which there is a greater number of termini than normal. In many cases, balance will be obtained by a greater number of origins on its siblings or play mates, but under abnormal conditions, where there are no available individuals to originate to, a definite imbalance will develop until gradually the child will have been conditioned to be a terminator. A quantitative description of the relations of individuals in terms of origins and termini may be fruitful aids to the study and analysis of personality. But though this will not be discussed here, it must be pointed out that the essential tool in the hands of investigators is the definition of a system, which is based essentially upon the notion of equilibrium.

The fundamental definition of equilibrium, limited for the moment to origins and termini, is as follows:

$$\Sigma O - \Sigma T \pm C = O$$

The constant C here defines the imbalance of the system as a result of previous conditioning, on the assumption that in a system which was not distorted in this way, the constant C would be equal to zero. This definition is, however, only a preliminary one. From it may be derived more specific equations in which each relation of a person affords a partial definition of the system, and the whole number of equations describing all the pairs in which an individual interacts will give us the general equation given above. In a complete definition other variables must be added. These variables involve the determination of the functions for interaction within single events for each pair (see discussion of slopes earlier in this chapter), the measure of the variability of the slopes, and an estimation of the maximum amount of interaction that the organism can stand. The complete definition cannot be worked out until our new recording apparatus has been applied to situations involving series of events between individuals. The limited definition is, however, easily used, even without a more precise definition of the conditions of a system.

The purpose of this chapter has been to show that we may obtain clear-cut evidence of uniformities if we apply methods of measuring to the interaction of individuals. We have not tried to do anything more than illustrate the way in which these results were obtained, but they should be sufficient to demonstrate the usefulness of the method. We have shown that there are certain invariant properties of the individual (of his personality if you will), and that we can make predictions of the effect of his interaction with other individuals. We have also indicated how in the relation of any individual to his fellows, there is to be found a regularity in the way he behaves in reference to the distribution of events in time, and we have indicated that further work with new apparatus should enable us to unite these two kinds of description. Finally, we have shown that the phenomena whose description we have so roughly outlined may be treated as making up a system in a state of equilibrium.

Not only may each individual be regarded as a system and be defined quantitatively, but we may also estimate the conditions for such institutions as a family, a factory, a school, etc. Here it is evident that if we isolate such a system, the sums of the origins and the sums of the termini should balance each other. However, the

occurrence of events in which more than two people respond to a single origin have to be allowed for, and have a very special importance in the definition of the conditions of institutions regarded as systems. We shall discuss the methods by which this can be done in a later chapter. Here it is sufficient to say that by utilizing the theory of the equilibrium of a system, the measurements that are made of the interactions of individuals can be used to predict the behavior of individuals. If we wish to know what the effect of marriage or the death of a parent will be upon an individual whose maladjustments have to be quantitatively described, the condition that the system has an equilibrium to maintain provides us with the basis for deriving the equations embodying the rates of change to which that individual is subject in his interaction. If we wish to know whether the introduction of a new process will upset the equilibrium of a factory system, or whether a change in the method of administration or the adoption of any single policy will lead to discontent, strikes, and similar crises, the consideration of the factory as a system in equilibrium will provide us with the key to the necessary solution of the problem. But the application of quantitative methods to such complex systems as families and factories depends upon the development of a systematic method of describing the relations of individuals in such institutions, a subject which we shall take up in the next chapter.

IV. THE ANALYSIS OF HIERARCHICAL INSTITUTIONS: SETS, COMPONENTS, AND SYSTEMS

Almost all an individual's life is spent in interaction with other individuals in institutions. From the time of birth, when the individual becomes a member of a family and begins his conditioning to others, through the whole course of his waking hours, in school, church, at work, in clubs, societies, and political organizations, his behavior is constantly being modified by the actions of others. If we hope to describe the behavior of individuals and from our description predict the future course of events, we must analyze these institutions. This means that we have to develop methods of describing the relations of a number of individuals in a state of mutual dependence. Up to this time, we have been concerned only with the equilibrium of single individuals or the members of pairs of individuals.

In order to obtain an operational definition of the orders of actions among individuals in such institutions, we have to isolate the organizing element which produces these complex systems of relations. If anyone will turn to a characteristic plan of organization of a business or political institution, he will see that, far from giving us a plan of the interrelations of individuals, the makers of *these organization charts have been content to show that departments* are related, but not really *how* they are related. Even the most specific statements say little more than that the two departments shall coöperate in certain matters. Only a few very important individuals, such as the chief administrative officers, are shown on these charts. Consequently, when questions of responsibility come up, unless routines have been worked out by tradition (this occurs only in companies where there is little change due to lack of competition), there is commonly a complete lack of responsibility and a large amount of "passing the buck."

Similarly, in other institutions, such as families, where investigation of kinship systems has been in vogue for many years, there is little attempt to distinguish the observational basis for the complicated and mystifying sets of terms that make up kinship systems.

In the study of institutions, almost all analysis has been in terms of what are called functions. These are not functions in the mathematical sense. The word simply means that some rough attempt is made to determine what the activity of the institution is, such as

that the "function" of the family is to "orientate the child." It is amusing to note that the "functional school of anthropologists" has its mate in the field of industrial management in the "functionalists" following in the footsteps of Taylor (20, 21). Both based their attempts to classify relations in terms of an "activity analysis."

But this kind of functional interpretation obviously has no operational basis. Subtle minds and good observers can discuss and dissect the institutions that they are dealing with until they find as many functions as the schoolmen in the Middle Ages found angels on the head of a pin. The arguments that follow as to whether any particular author's selection is the proper one are unfortunately rendered futile by the fact that there are no known methods for settling them. Hence without going into any refinements of this sort, let us consider what the operations already worked out will tell us about the relations of individuals in institutions.

Components

A sequence of events between the members of any pair of individuals constitutes a relation. Since we wish to extend the use of the operation of determining the *origin of action* to all the events making up a relation, we must separate the events in which one member of the pair is the origin from those events in which the other member of the pair is origin. In this way, any relation between two individuals may be divided into two parts, and we call these *component relations* or *components*. In other words, we define a component relation as including only those events in which one person is the origin, and so a component represents all events in which the order of action among the constituent individuals is the same as determined by the origin of action. We may state this more precisely in the following way: If we let the letter p represent the actions of Individual A, and the letter q represent the actions of Individual B, then we assume that a component relation between A and B is made up of a series uniformly of the order $p\ q$. If, during the interaction between the individuals A and B, a series of events occurs in which the quanta of action occur in the order $q\ p$, we shall assume that this may be regarded as a different component relation. The whole sequence of events between A and B, made up of two component relations, constitutes the relation itself.

It is evident, from this definition, that all events between two

people may be sorted out in their component relations, and the use of such quantitative descriptions as the ratio of the number of events included in one component to the events in the other gives us a way of characterizing the relation of the two individuals in question. On the other hand, the definition limits our treatment of certain orders of interaction which appear in all institutions, namely their hierarchical character. What determines a hierarchy, and how may it be defined?

Sets

As a matter of observation, hierarchies are characterized by the occurrence of individuals linked in relations of such a character that an action, say an order, beginning with one individual will produce a response in another, who will in turn originate for a third, and so on through many relations. On the other hand, similar chains of events are often to be observed where empirically we do not consider that a hierarchy is involved, say in a group of children playing together. Now the solution of the problem is that either our empirical diagnosis of what constitutes a hierarchy cannot be made operational, or else that in such description we have not included the phenomena upon which hierarchies are based. We shall see that the latter is in fact the case.

Up to this time, we have been concerned only with events in which two people are in interaction. We shall now consider those cases in which more than two people take part. It should be evident from the definition of an event given in Chapter II that if there are three or more people together, either all events will be between the members of pairs, or one individual will be observed to originate action, and this will be followed by actions on the part of the others. In a few cases, two people may originate simultaneously, and one or more individuals may respond. Outside of vaudeville performances and some ceremonies, such synchronous origins are rare.

Much more common are those events in which several people respond, following an origin on the part of an individual. The number of terminators to a single action of one individual may be very large, as in an army, where in response to a command a thousand soldiers may begin to march. Now, it should be evident that the repeated and characteristic appearance of just this type of event

is the distinguishing mark of a hierarchy. That is, a hierarchy is made up of an aggregation of individuals in interaction in which some individuals originate action for others who in turn originate for a third group, and so on, depending upon the extent of the hierarchy. Such an aggregate of individuals we call a *set* and define as follows:

A *set* is an aggregate of relations such that every individual related in the set is a member either (*a*) of a class of individuals who only originate action, or (*b*) of an intermediate class of individuals who at some time originate action and at another time terminate action, or (*c*) of a class of individuals who only terminate action. At some time, every individual in the first class is the origin in an event for every pair of individuals who terminate action (which includes the members of the second and third classes). At some time, every individual in the second class is the origin in an event for every pair of individuals in the third class. At no time do the members of the third class originate action in an event to any pair of individuals in the first or second classes. In extended hierarchies more than one intermediate class may be distinguished. In such cases, we may break up the second class into subclasses. Then the members of Class 1 will originate action in events to every pair of individuals in Class 2*a*, who will in turn originate action in events to every pair of inividuals in Class 2*b*, and so on. The members of Class 2*n* will finally originate action for every pair of individuals in the third class. A special case of this may be distinguished in which an individual is origin in an event for all the individuals in the class of those who terminate action. The prescription of a pair of individuals in the definition is only a minimal limiting number. Any number of individuals up to the whole class, as in the special case, may be observed to terminate action.

The reader should note that although many events between members of a set may be events between the members of pairs, yet the orders of interaction are determined by a series of events in which more than one person terminates action. The set is defined by the occurrence of these events which for convenience we shall call *set-events* to distinguish them from the more common events involving only the members of a pair. Every administrator knows that at more or less frequent intervals he has to call together the members of his organization to explain policy, etc. When he does

this, he is originating action in a set-event, and the members of his organization are the class of termini. On other occasions he may call together only executives above a certain level; these may later call together their subordinates. By judicious use of such set-events, that is to say, with due regard for the quantitative pattern of set-events, the administrator is able to maintain a "well-integrated" organization.

In the discussion of the component, we saw that two and only two components could be distinguished between any two individuals. Where individuals are related in sets, however, several components derived from sets may be distinguished, for as each set represents an order of individuals in terms of origins of action, so each set may be regarded as having its distinguishing component.[4]

Several sets may be isolated among a small number of people, each having its own component. If Individual *A* originates action, and *B* and *C* respond, the relations of *A* to *B* and *A* to *C* are described by the same component. If Individual *D* is observed to be the origin of action, and *B* and *C* respond, then *D*'s relations with *B* and *C* form part of the same set and have the same component as previously determined for *A*, and *A* and *D* have the common property of originating action in respect to the same individuals. If in another event, however, *A* is observed to originate action and *C* and *D* respond, then we assume that this represents another set and must be described by another component. For *A* and *D* no longer have the same relation to *B*, as determined in the previous example.

It must be understood, however, where three components describe the relations of two people in the group being studied, that no events are assigned *unless these are set-events*, and hence involve more than two people. For sets are ways of describing the uniformities of aggregates of people interacting in events in hierarchies,

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[4]A component may be defined more precisely in the symbols of mathematical logic (6), in the following way:

$$\text{Interaction} = xAy$$

$$\text{Event} = xA_1y$$

$$\text{Component} = \hat{R}(x)\,(y)\,(z)\,[xRy.xRz.].(\exists t)\,(xA_1y.xA_1z)\,]$$

Special Case

$$\text{Component} = \hat{R}(x)\,(y_1)\,(y_2)\,(y_3)\,\ldots\,[xRy_1.xRy_2.xRy_3\,\ldots.].(\exists t)\,(xA_1y_1.xA_1y_2.xA_1y_3\,\ldots.)\,]$$

(We are indebted to Dr. Willard van O. Quine for the above definitions.)

and there is obviously no operational method of assigning events involving only two people if there are more than two components. As far as is now known, all hierarchies have more than two sets, although not all pairs in a hierarchy are necessarily related in more than one. This point will be discussed further on in the chapter.

In order to illustrate the method of working out a set, we had originally presented a series of events observed in different institutions in a small community in several appendices. Due to limitations of space, we shall not be able to present them here. We shall, however, discuss the methods of work in each case, referring to events whose occurrence can be verified by the reader at any time, and in most cases, his own observation will have already made him familiar with them. We shall begin by discussing typical set-events in a public school system. The method to follow in deriving a set is as follows:

Let us select one individual as origin and observe for what individuals he originates in set-events. For example, we may begin with the principal of the school. We know from our own experience that the principal conducts the school assemblies and originates action for the teachers and pupils attending. We also know that on other occasions there are meetings of the teachers which are addressed by the principal. Frequently, when the pupils have been playing in the street, trespassing on neighbors' property, or breaking school regulations, all the pupils will be lectured by the principal. Similarly, our own experience when we went to school tells us that the school teachers originate action again and again for the pupils, in the classroom, on the playground, and so on. In these set-events, therefore, we note first of all that there is an overlap in the individuals who terminate action. Both principal and teachers originate action for the pupils in different events. Hence, teacher and principal are both characterized by originating action for the same people, the pupils, and the events in which this is the case may be regarded provisionally as instances of the same relationship. That is, the pupils make up the class of termini.

Let us continue this analysis, taking a situation in which another individual has relations with the two individuals already dealt with. For example, the attendance officer, familiarly known as the truant officer, originates action and the pupils respond. Therefore, the attendance officer, the principal, and the teachers all have the same

relationship to the pupils. In the pursuit of his duty, however, the attendance officer often originates action to principal and teachers and they terminate action; and conversely, both principal and teachers originate for the attendance officers when a pupil is truant.

If we take other instances of set-events and other persons in the school system who interact with the individuals mentioned, we find that we can fix them in relations in terms of their respective positions in the set-events. The superintendent of schools originates action and the principals and teachers respond, and on rare occasions he originates for all members of the school system. In the same way, we can determine the positions of special supervisors, janitors, and so on in the events in which they interact. Let us now consider how this order is systematically represented.

In the first place, it should be evident that if we are given any event in which several individuals interact, all that we can state is that Individual *A* acts, and that this is followed by actions on the part of Individuals *B* and *C*. If we proceed to secure a number of events of this type in which other individuals take part, but in which there is always at least one of the individuals from preceding events, we begin to see that although these individuals may interact in one event, there occur other events in which other individuals interact with them, and there may even be cases where individuals are interposed between others. Thus the superintendent interacts with pupils, but he also interacts with principals, for whom he is the origin of action (as he is for the pupils). He originates action for teachers. Principals and teachers are both origins of action for pupils. And, lastly, principals themselves are origins of action for teachers.

We have thus established one set of relations from the instances given, which may be represented in the following table (Table 2):

TABLE 2

Class 1	Class 2*a*	Class 2*b*	Class 3
Superintendent	Principal	Teacher	Pupil
	Principal	Teacher	Pupil

(The order in this set, from origin to terminus, is from left to right.)

By continuing the analysis and securing more events, other sets could be worked out in which the attendance officer, the supervisor, etc., took their places as making up the class of origin. The method,

however, should be clear. We first observe a number of set-events in which the same individuals take part. For example, if we have observed Individuals *A*, *B*, and *C* participating in an event, we try to secure another observation of an event in which two of them, say *A* and *B*, are interacting with a fourth individual *D*, and we extend this process as far as possible, making sure that the membership from event to event is always continuous. If *A* originates for *B* and *C* in a set-event, and again for *C* and *D* in another, but does not originate for *B* and *D* in a third set-event, then we distinguish two classes of individuals who are termini, and provisionally two sets. After isolating all the separate terminating classes, we next take the individuals who are origins and see if they terminate to any of the other individuals who are origins, and thus make up the intermediate class. Finally, we have a small group left in each set who are only origins. We shall now give a short analysis of several different institutions, the family, the factory, and the government. To illustrate the application of these methods and the sets determined, it is suggested that the reader try the method for himself on events that he observes in any institution in which he happens to interact. In this way, the determination of sets will relate to his own experience, and he will be able to follow the rest of the discussion in this and the following chapter with greater ease.

Sets in the Family

If anyone sufficiently curious sits around in a family group, either his own or that of some other person, he will notice that many of the events occurring fall under the classification of set-events. If he takes the trouble to jot down who is involved on a piece of note paper, he will find that the events which we are briefly outlining happen over and over again. We cannot here print a sufficient series of examples of such observation, again for reasons of space, but they may be checked against the reader's own experience. In such a case, it is an easy matter to build up several sets on the basis of a single evening's observation.

In the first place, we will note that both the father and the mother are observed in separate set-events to be the origin of action, and the children the termini. Therefore, by the rule given in the definition of a set, we assume that these interactions may be represented by the same set. We shall indicate the component of this set by the

letter *a*, and for convenience we shall call this component in words, *the parent-child component*. Such an identification, however, must not be taken to imply more than the definition tells us. All that we can say is that the component *a* describes the interaction in set-events between an individual called a father and his sons and daughters, and an individual called a mother and the same sons and daughters. No other inferences are valid.

Beginning with the father, we observe that not only is he the origin of action for his children, but that in some events, he is the origin of action for mother and daughter. Since in these events, one of the individuals, his wife, is the terminus in the set-events, whereas in other set-events, she is the origin of action for the daughter, we may conclude that we have a different set and a different component. This inference is strengthened by noting that a son often originates action for mother and daughter. Thus, mother and daughter are termini in events in which father and son are origin. We shall indicate this component by the letter *b*, and we may say that in this case actions originate with men and are terminated by women. In other events, the contrary order is found. Father and son are termini in set-events for mother and daughter, and we may therefore distinguish a third set and component to which we shall give the letter *c*, in which action originates with females, and males respond. Finally, when children are by themselves, not only do we find events *in which the b and c sets are manifested in the order of set-events*, but we also find events which cannot be described by any of the components hitherto isolated. Such an event takes place between older and younger children, in which the older children originate and the younger terminate. The occurrence of set-events between these individuals in this order indicates the existence of another set which may provisionally be denoted by the letter *d*, and called the older-younger component.

We have isolated for consideration four sets of relations in the immediate family. The isolation of these four does not preclude the isolation of a further set of relations involving the origin of action by children for the parents. Compared to the other sets, however, set-events of children to parents are relatively infrequent. Events involving a son originating to his father in a pair event are naturally to be found, but for the determination of the family hierarchy such events do not make up sets. Furthermore, where events involving

three generations are used, the actual completion of the child-to-parent to-grandparent set would be even more infrequent. Therefore, when we discuss extended kinship relations, we shall omit for the purposes of exposition all mention of such sets.

Sets in a Factory

In factories, it is easily seen that the process of manufacture consists of a series of events connected with the flow of material through the factory in which individuals are in interaction in a fixed and repetitive way. With this in mind, we shall now work out the sets of relations in a shoe factory, based upon events actually observed. A similar analysis can be worked out by anyone in a position to make comparable observations.

If we begin by taking a department in the factory and observing what events take place between individuals, we see first that the foreman is constantly the origin of action and the workers the terminus. He walks around the room watching the workers, and occasionally stops and suggests other ways of working, etc. At less frequent intervals, the works superintendent on his tours of inspection stops to speak to the foreman and workers, particularly when difficulties are encountered in the manufacture. At other times, he will summon all the foremen to his office to outline a new order, discuss a new design, etc.

Since the workers make up the class of termini, the foreman, the intermediate class, and the works superintendent, the class of origins, we have an aggregate of individuals whom we may regard as related in a set, and we shall assign the component of this set the letter *e*. Such a set is not necessarily complete; that is, it cannot be regarded as completely determined until all the individuals in the factory interacting in events have been examined to see whether they are related to the ones just described in terms of the set. For the purpose of analysis, we may regard this collection of individuals as a partial set to which a component may be assigned. We represent this set in the following table (Table 3):

TABLE 3

Class 1	Class 2	Class 3
Works Superintendent	Foreman	Worker
	Foreman	Worker

During the actual process of manufacture in the department, we also observe two series of events which involve the interactions of workers. In the first series of events distinguished, of which we have given an extensive description, the worker performing a particular process passes on the completed job to the next individual in order. For example, in the fitting department, the fancy stitcher passes the upper to the vamper, and so on. In the second series of events, we note that material which an operator considers to be faulty is passed backward, against the flow of manufacture, to the individual who is responsible. Each of these series may be considered a set of relations, since there is a different class of origins and termini in each case, and we may assign the letters f and g respectively to represent the component of the set concerned with inspection and that of the set concerned with the process. We have now tentatively isolated three components which describe in a first approximation the events between individuals in a department. For convenience, we shall call the first component, e, the supervision component, the second, f, the staff component, and the third, g, the process component. Let us now consider the other relations in the factory and see whether we can extend these sets to describe all the relations that may be observed.

If we begin by considering the relations of individuals in one department to those in another, it is evident that these sets may be extended to describe the origins of actions observed. In the first place, the inspection and process components characterize the interactions of the members of two departments. Completed materials are taken on racks out of the department which has finished with them into the next department. The foreman or the last worker in the process of manufacture takes them and hands them over to the foreman or first worker in the next department. In the same way, when faulty material is received from the preceding department, the foreman, or rarely a worker, originates action to the foreman or worker or both in the department supposedly at fault. The table below (Table 4) represents this situation between departments, including the supervisory set.

If we turn to the bookkeeping department, we find that the internal relations, from what evidence we have, represent a set which is similar to that established for the manufacturing department. Here, the head bookkeeper originates action to the head clerk and the

TABLE 4

Foreman Dept. 1	Foreman Dept. 2 Worker Dept. 2
Worker Dept. 1	Foreman Dept. 2 Worker Dept. 2
Foreman Dept. 2	Foreman Dept. 1 Worker Dept. 1
Worker Dept. 2	Foreman Dept. 1 Worker Dept. 2
Foreman Dept. 1	Worker Dept. 1 Worker Dept. 2
Foreman Dept. 2	Worker Dept. 1 Worker Dept. 2

(Note: This holds true for internal department relations where supervision is divided. It is understood that Department 1 is first in the process line and second in the inspection.)

clerks in the department, and the head clerk in turn originates action to the clerks. We may regard this to be a part of the same set as the one in the factory proper, because the manager is the origin of action for all the members of both sets, the two division executives reporting directly to him. All the individuals in the organization, both in office and shop are therefore termini in this set. What can we say about the relations between the office force and departments in the factory?

The order of actions between individuals is as follows: The works superintendent originates action, and response follows on the part of the head bookkeeper and the clerks in matters relating to the payment of workers, the determination of costs in planning an order, etc. Similarly, the foreman, in turning in the tags collected from the workers which record the amount each man has produced, originates action for these individuals. In other events, the office force originates action for the individuals in the production departments. Thus, the foreman and workers are paid by the clerical force who keep the records of the work done. The head bookkeeper and clerks detailed to perform the calculations prepare figures on the cost of operations which they send to the works superintendent and to the foremen of the several departments.

The relations here outlined indicate that we may distinguish two partial sets of relations. The first is the set which may be sum-

marized as the origin of action by members of the office force to members of the production departments. The second is a set involving the relations of the same individuals, in which the actions begin with the individuals in the shop and the responses are manifested by the individuals of the office force. But if we turn to the events which defined the two sets, f and g, we note that the same individuals are related in those sets in the same way. That is, the individuals who respond in the events described by the process set are the same individuals who respond in this case, and by the definition of the set we may, therefore, regard the added individuals as related in the same set and having the component g. Similarly, the relations of the office force (the origins of action) to individuals in the shop are part of the set already described to which we assigned the component f, the staff component.

Just as in the family, rare set-events occur in which the workers originate and the supervisors terminate action. These are infrequent in most factories, although for reasons we shall indicate briefly later, a disturbance of the quantitative character of events sometimes takes place, and a fully developed set works out, first through a strike and then through a union which enables workers to originate to management. Some factories have organized workers' councils, employers' representation plans, in order to enable the workers to originate action to management, but the set-events have a very low frequency in most cases.

Sets in Political Institutions

We shall now analyze the statutes referring to a single institution, i.e., the formal and prescribed rules which define the relations of individuals in the political system. We include this material first to show that a complicated administrative hierarchy may be dealt with in the same way, and second, to show the inadequacies and ambiguities of such rules, statutes, etc., whether they are found in industry, in the constitutions of clubs and associations, or in the laws of a state or city administration. Although this material is primarily concerned with fixing responsibility for action between individuals, and describing the different events and sequences of events in which this shall take place, yet in no case are the relations of even the more prominent individuals completely described. What meaning is to be ascribed to such phrases as "with the advice and consent of coun-

cil," or "the department shall coöperate" is, as far as we have been able to discover, unknown to anyone, and could only be determined by a careful observational study of the actions of the individuals in question. The question of how to analyze such phrases in order to determine what they mean will be discussed in Section III of this book.

The political organization has four main subdivisions, in each of which the individuals in a community interact. The subdivisions are the federal, state, county, and city governments. In the present analysis, we shall treat only the last three of these, taking our material from the General Laws of the Commonwealth, and we shall omit any consideration of the Federal Government. In order to confine the discussion to the space of a chapter, and at the same time present a sufficiently detailed exposition which will demonstrate the steps in the analysis, we shall select one department in the state government and another in the city government which are in interaction and are related to the same individuals; and we shall consider the interrelations of the individuals in these departments to other individuals in the political system. The departments which we are going to choose are those connected with the schools.

Due to limitations of space, we are unable to publish the actual sections of the General Laws of Massachusetts upon which this analysis is based, but those who are interested in this particular example may turn to the Tercentenary Edition for reference. In the text following, the reference is indicated in the following way; the first number in the parentheses refers to the chapter in the Tercentenary Edition of the General Laws of Massachusetts; the second number, to the section in the chapter. Thus [71-37] refers to Chapter 71, Section 37.

In beginning to look for events in which one person originates for several others in order to begin to build up sets of relations in the school system, we shall turn to Chapter 15 where the general form of the Department of Education is laid down. In [15-4 and 5], the commissioner of education and the advisory board originate action for the members of the department, as well as for the directors of the several divisions within the department. In [69-1], the commissioner of education is the origin of action for the pupils, the teachers, and the school committee. If we turn to [32-6] and [43-32], we

observe that the school committee is the origin of action for the superintendent, the principal, the teachers, and the pupils.

Continuing the analysis, the school committee is origin for the teachers and pupils in [71-57] and [71-72]. The same order of actions is also stated implicitly in [71-37]. In [71-59] and [71-73], the superintendent of schools is the origin of action in events in which the teachers manifest the terminal action. The teachers originate action, the pupils respond, [71-57], and [72-2] the principals originate action to the pupils.

In this way, we have distinguished a set, beginning with the commissioner of education and the advisory board, and ending with the pupils. We shall give the component of the set the notation *e*, and for convenience call it the supervisory component. This set as outlined does not describe the relations of all the individuals represented in tables of the events, and to see whether the omitted individuals are related in this set, it must be discovered how they interact with the individuals already included. If this is done, we find that the set *e* may be extended to describe the relations of all the individuals mentioned. The full demonstration of this point would require the addition of much material that we have not the space to present. The extension of this set to other relations may be illustrated by considering the event [71-57]. In this event, the department of public health originates action for the teachers and pupils, just as the school committee does, and by definition, they are all related in the same set. If we work out the relations of the state department of public health and the city board of health, we shall find that they are related in the same set, an extension of the set which we have been describing.

We may distinguish another set in the relations of these individuals in the schools and in the health departments. On [71-58], the department of education originates action for the department of public health and the school committee. In Chapter 71, Section 56, in the General Laws, the school committee originates action for the local board of health and pupils suffering from disease. In these two instances, the department of education, the school committee, and the teachers originate action, and the department of public health and the board of health terminate the action. In the previous events in which the department of public health acted, the members of the department were the origins of action; and the school com-

mittee, teachers, and so on, manifested the subsequent actions. This change in the order of the origins of action in the relations of the same individuals indicates that these new events must be described by a new set. That is, the class of individuals who originate action in the first set, namely the department of public health and the city board of health, now made up a class of individuals who terminate action, and hence the events in which they act must be described by a new set. A similar reversal of order of actions occurs for the school committee. In the first event, the school committee, teachers, etc., constitute the class which terminates action, and in the second set they originate action. Since the department of education also originates action for the department of public health in the same way, it becomes a member of the originating class in the second set. Previously, it should be remembered, it originated action in the first set. We shall denote the components of this set by the letter *f*, and for convenience call it the staff-line component.

Let us take another individual not hitherto described, the supervisor of attendance, and see how his relations may be described. In the event [72-2], the attendance officer originates action and the teachers, principal, and pupils terminate it. In the same section, the school committee and the superintendent of schools originate action for the supervisor of attendance, and in other sections we have seen that they are origins for all the individuals in the city school system. We may assign these relations of the supervisor of attendance to the set *e*, since the same individuals terminate action for him as for the school committee and the superintendent.

On the other hand [149-92], we note that the supervisor of attendance originates action for the school committee, the superintendent of schools, and the department of labor and industries. In another event [70-16], the superintendent of schools is the origin of action for the chairman of the school committee and the commissioner of education. Here we have two individuals, the supervisor of attendance and the superintendent of schools, who in set *e* originate for them. We may, therefore, regard the relations of these individuals as constituting another set. We cannot regard this set as fully demonstrated because there is no explicit event in the General Laws in which either of these individuals originates action for both the department of education and the department of labor and industries. The order of the actions from individuals in

the city schools to individuals in state departments parallels the order of the relations described for Set *f*. We could assume that both these cases are instances of this set, but we do not possess evidence from the General Laws which would prove that the department of labor and industries, department of public health, etc., make up a class of those who terminate action.

This kind of gap in our knowledge of events involving individuals in the political system is characteristic of statute material. In many cases, origins of action in events are clearly specified, but in many others relations both within and between departments are not stated, although it may be clear from our knowledge of observed events that there are such relations. If we compare the observed events in the school system, already given, with events involving the same individuals whose relations are described in the General Laws, we see that many instances of relations are missing in the latter material. Of course, the observed events in the school system did not include the relations of the city schools to state departments, which are best described in the statute material.

One final set of relations may be distinguished in the material on the General Laws. In two articles taken from the Constitution of the Commonwealth, and in the events [43-31] and [43-58], we find that the voters originate action for (elect) the governor, the councillors, the school committee, the mayor, and other officials whom we need not consider. These relations constitute another set to whose component we shall assign the letter *g*, and for convenience call the voter-representative component. It is of interest to point out that this component determines the particular character of a political system. Whereas in other systems that we have described the relations are less complicated, in this case every individual who is the terminus of action in Set *e* is the origin of action for the heads of the subdivisions in Set *g*.

Sense or Direction of a Component

Once we have determined any component of the relation of two individuals, we then proceed to define its sense or direction. That is, we wish to state that the order that we follow in proceeding from one individual to another is from the one whose action is the origin in the unit of interaction to the one whose action is regarded as the terminus. Thus, if Individual *A* is the origin of action

in the relation, we refer to the relation between *A* and *B* as having the positive direction or sense when the units of action are described in the order *A* to *B*. On the other hand, if we want to go in the reverse direction, from the individual who manifests the response to the one who initiates the action, in this case from *B* to *A*, the direction is by definition negative.

By assigning to each component a letter of the alphabet which can be represented in italics, we can describe the relation between any two individuals in terms of its components, using the sense or direction of each component to indicate whether the one individual originates action or manifests the subsequent action. We can thus state economically not only the relation of a pair of individuals, but also of larger numbers of individuals in this fashion. In other words, we are able to differentiate individuals in terms of their relative positions as determined by the components that we have abstracted.

The usefulness of this procedure will be particularly evident if we turn to concrete material. In many kinds of work it is necessary to systematize the order of the relations of individuals. In administering large commercial enterprises or departments of government, the administrator attempts, by the use of organization charts, standard practice instructions, rules, by-laws, etc., to make explicit the line of authority, the order of work, and so on. The purpose is to fix the responsibility of the individuals in the organization under all circumstances. This means fixing the order of action, since responsibility entails action. By the determination of sets, the administrator fixes in concrete terms the order of action in his organization. By placing all the individuals in the institutions in their places in their respective sets, he makes it evident who will act first, and such terms as "coöperation between departments," "report to so-and-so," will be clearly defined in terms of action, and not be as at present vague and conducive to uncertainty, inefficiency, and red tape. We shall now consider the method of analysis of hierarchies in detail.

Unit Relations

In any institutions that we may have to deal with, we begin our analysis by taking a small group of individuals, and from the observation of events involving those individuals we extend our results to

large congeries of individuals. Thus, in order to obtain set-events and work out the sets, it is convenient to take a department in the government, in a factory, an immediate family, or some other small group which we regard provisionally as a unit. It is obvious that in so doing we neglect for the moment the other individuals in the institution who may be interacting with the individuals upon whom we have decided to concentrate. In the factory, if we concentrate our attention upon the cutting room, we disregard the relations of individuals within the cutting room to the management outside the room, to the bookkeeping and office force and so on. Nevertheless, it is a matter of observation that these individuals are interacting with our chosen group, and the individuals interacting in the events within the group are at the same time members of other collections of individuals. A set of which one of our individuals is a member may be extended to include other groups, as for example in the supervision set, where all the individuals in the institution take some place, and where the foreman, though origin for his workers in the department, is terminus for the works superintendent and the president of the company.

In the same way, an individual in an immediate family may be a member of another immediate family. A man may be a son in one family and a father in another, and as a matter of observation there is interaction between the members of the two groups. The individuals form a continuous group which may be described by the same components. Just as the relation of a man to his son is described by the *a* set, so in turn the relations of that son to his son, and the grandfather to the grandson are also included. So the *a* set is made up of the grandchildren who are members of a class of individuals who only terminate action, the parents who both originate and terminate, and the grandparents, who are members of the class which is only origin (assuming that their parents are dead).

By the use of the small group as the starting point, relations can be extended in sets in such a way that the positions of all the individuals in a hierarchy are fixed in terms of one another. This is done by regarding relations of individuals in these small groups as unit relations. A unit relation, therefore, represents that pair of individuals whose interaction in a set is direct; that is, there does not exist any intervening individual (or individuals) who is a member of the class of both origins and termini. We shall call

such a group of individuals, whose interactions make up the unit relations, a unit system.

Let us take the immediate family as an instance of a unit system, and see how we can describe the extended kin relations in terms of compounds of the unit relations. The following table represents the unit relations in the immediate family, described in terms of the components of the sets isolated earlier in the chapter (Table 5).

TABLE 5

UNIT RELATIONS IN THE FAMILY

	Relation	Formula
1	father-son	(a)
2	son-father	$(-a)$
3	father-daughter	$(a, b, -c)$
4	daughter-father	$(-a, -b, c)$
5	mother-daughter	(a)
6	daughter-mother	$(-a)$
7	mother-son	$(a, -b, c)$
8	son-mother	$(-a, b, -c)$
9	brother-sister	$(b, -c)$
10	sister-brother	$(-b, c)$
11	husband-wife	$(b, -c)$
12	wife-husband	$(-b, c)$
	We can represent the relations of siblings by introducing a fourth component, d	
13	older brother-younger brother	(d)
14	younger brother-older brother	$(-d)$
15	older sister-younger sister	(d)
16	younger sister-older sister	$(-d)$
17	older brother-younger sister	$(b, -c, d)$
18	younger sister-older brother	$(-b, c, -d)$
19	younger brother-older sister	$(b, -c, -d)$
20	older sister-younger brother	$(-b, c, d)$

In this table, each relation between any two individuals is described by a formula which gives the components isolated for the two individuals in question. These formulas, in tabular form, represent the components of the relation between two individuals as abstracted from the sets in which they are related. Where a minus sign is prefixed to the letter denoting a component, we mean that the sense as determined from the order of the units of interaction in the set is negative. The order of the components in any expression for a relation is of no importance, and the letters are separated by commas for convenience. The parentheses indicate that they

enclose all the components isolated for that relation in the foregoing events. In the second half of the table, we give the relations in which the fourth component *d* appears, which represent the expansion of the formulas for brother and sister in numbers 9 and 10. The converse of every relation is also given.

Relative Product

If we now juxtapose two immediate families at the individual who is found in both, and count the constituent relations, it is readily apparent that compound relations such as grandfather to grandson may be expressed as combinations of the relations in a single immediate family. The relation of father to son is represented by [*a*] and the relation of grandfather to grandson is represented by [*a*][*a*]. This described for us the number of relations in the *a* set by which one individual is separated from another, and by juxtaposing the two expressions in this manner it also may be used to indicate that the two individuals are related in the set *a*. Whence by definition they interact directly, in that grandfather is the origin and grandson the terminus, they are also related through another individual. We shall call these combinations of unit relations or compound relations the *relative product* (6, p. 62).

In Appendix *F* we give a table of the relative products which describe an extended kinship system. For the reader interested in such problems, this table will provide a convenient operational description of kinship. In Appendix *G*, a much shorter table with the unit relations and a few of the relative products for a factory are given. It may be used as the basis for the construction of a relational description of an organization. It is not worked out in as much detail as the kinship table, because at the present time the problem of organization in industry has really never been touched in the sense of describing the interactions of individual to individual All that exists are charts showing a schematic relationship between departments (11, Part II). In kinship, on the other hand, such analyses, though often purely terminological, have been the fashion in ethnology since Lewis Morgan (14).

It should be apparent that the use of the shorthand formulas above described and illustrated in the appendices, will give one an algebraic method of describing a hierarchy. The relations of individual can be put down in notational form in a way which reveals bot

to the student and the executive the actual observed or desired interactions between individuals. Such a table of formulas is not a curiosity, but rather gives us an organizational shorthand which describes or can be made to describe the actual relations in an institution. On such a framework a quantitative description of relations can then be mounted in such a way that the effect of change or of existing rates of interaction can be predicted.

The System

Any institution can be described not only as a relatively static order of actions among individuals, but at the same time as a quantitative system. The quantitative description of the rates of interaction of individuals under certain conditions defines a system. We have already discussed systems briefly in Chapter III. In a first approximation, such systems are isolated from other systems by the quantitative character of the relations (8). An oversimplified statement is to the effect that during the period of interaction of the members of any institution, the events involving each other have a more frequent occurrence than events with other individuals outside the collection. Such a statement is a very rough one, and it may be said with equal precision that a system comprises those individuals who are members of sets in common with other individuals who in turn are separated from others who are not members of those sets. *Either definition is useful for certain purposes.*

The Subsystem

The description of any collection of individuals who make up a system first involves the isolation of all the sets that can be established. We have seen in preceding sections that a large number of set-events between the members of a collection may conveniently be described by three or at the most four sets. We shall regard these sets as constituting what we shall call a subsystem, while the whole number of sets necessary to describe all the set-events observed will constitute the system itself. Such a distinction between *subsystem* and *system* is an abstraction which will be found convenient for many purposes. The reason for this is that a subsystem represents an institution uncomplicated by the presence of sets not necessary for formal description.

In the several institutions just examined, namely, the factory, the

family, and the political organization, we have isolated three, or at most four sets. But in any collection of individuals, we occasionally observe set-events which can be described only by the introduction of additional sets and components. In the family, for example, we saw that a fourth component [*d*], which we called the older-younger component, complicated events involving siblings. In the description of the factory, we did not consider events where origins of action may be described by components [*b*], male-female, and [*c*], female-male, isolated for the family. These events derive from the fact that individuals of different sexes perform certain operations. For example, although most stitchers are women, there are a few stitchers who are men, and some events between individuals in the stitching room cannot be described without the use of other components than those isolated in this chapter. For set-events occur between men and women stitchers where the origins of action cannot be described by the staff or process components, but only by the male-female components. For the purposes of analysis we have omitted the rare examples of this kind of event in order to simplify the exposition, and have utilized events which occur more frequently. The elimination of set-events of this sort provides us with that combination of sets which we call a subsystem.

It is necessary, however, to have some method of determining which sets may be regarded as sufficient to describe a subsystem. To do this, we employ the following rule: A subsystem is described by the least number of sets which may be established for any instance of the system. For example, the factory that we described included individuals of both sexes, and we observe events which may be described only by the introduction of the two components of the relations involving sex. It is possible to find factories, examples of such systems, in which all members of the collection are male, and hence where these last two components will not occur. Similarly, schools may be found where all the individuals, principal, teachers, janitress, and pupils are female, and these components again may be omitted. In this way, we determine that certain sets are specific to subsystems, and we shall call the components of the sets in a subsystem the *subsystem components*. In order to determine the sets making up a subsystem, a comparative study is necessary, for the least number of sets needed for description can only be worked out by comparing a number of institutions of the same sort. The fol-

lowing table represents the subsystem components of the subsystems that we have isolated so far (Table 6).

TABLE 6

TABLES OF COMPONENTS

Family	1 Parent-child	(*a*)
	2 Male-female	(*b*)
	3 Female-male	(*c*)
	4 Older-younger	(*d*)
Factory	1 Supervisor-supervisee	(*e*)
	2 Staff-line	(*f*)
	3 Process-process	(*g*)
Political	1 Supervisor-supervisee	(*h*)
	2 Staff-line	(*i*)
	3 Voter-representative	(*j*)

SPECIAL CASE OF UNIT SYSTEM

In the factory the same formulas for the unit relations may be used to describe the interactions of workers within a department as well as the interactions of workers in two contiguous departments. But it should also be evident that the foreman-worker relations within a department are not necessarily described by these formulas. When a department has only one foreman, the description of the events represents a special case. If we describe his relations with the first and second individuals in the process, we find that only three-unit relations are needed to describe interaction in the department. We may represent the sets of relations within a department where there is only one foreman by the following table (Table 7).

TABLE 7

e	Foreman	Workers
f	Worker (Process 2)	Foreman
		Worker (Process 1)
g	Worker (Process 1)	Foreman
		Worker (Process 2)

Wherever one individual is the origin for all individuals in a set or partial set, such a representation holds, for example, in the following cases: The relations of the manager of the factory to the works superintendent and to the head bookkeeper; the relations of a foreman in a department to his workers; and the relations of the works superintendent to the foreman of the several departments.

Similar treatment may be accorded all instances in other systems of relations where individuals are the origins of action for several responding individuals. We have included the formulas in describing these unit relations in the second part of the table in Appendix *C*.

Tangent Subsystems

In the preceding sections, we saw that it was possible to describe *the relations of all individuals in subsystems through combinations of* unit relations. That is, one individual is selected as a starting point, and by following the determined order among individuals in the three sets in the subsystem, we can describe his relation to any other individual as a combination of the unit relations, the interaction of each pair linked in this way being regarded for the purposes of analysis as a unit relation.

For example, in order to describe the relation of grandfather to grandson, we regarded it as the combination of two unit relations, called father to son, and the order then is father to son *who* is father to son. In this way, we follow out the order of the sets, moving from individual to individual. In the same way, in the factory, the relation of works superintendent to worker runs: Supervisor to supervisee *who* is supervisor to supervisee, or in terms of the titles in the factory: works-superintendent to foreman to worker. The tables in Appendices *B* and *C* give the formulas for these relations. Where another component appears, as in the family, additional pairs of individuals must be included in the unit system. The convenience of this procedure is such that it enables us to treat all possible combinations of relations observed in a subsystem.

In many instances, however, we have to deal with the relation of two individuals where one is a member of one subsystem and the other a member of another. We may take as an example an origin of action by the attendance officer to the father of a pupil. We have a compound relation which follows the order: attendance officer to pupil *who* is son to father. We may, therefore, use the same method of combining relations between members of two subsystems as that which we used in the case of a member of a subsystem itself. But there is one difference which it is necessary to isolate. That is, in the relation between the attendance officer and the parent, we observe that the interaction in which the attendance officer is the origin and the parent the terminus is dependent on the presence of

of actions in sets, and that changes in the present observable state of the subsystem may upset[7] the equilibrium not only of certain individuals affected, but also of the whole institution. In order to deal with such problems, we shall need to consider the question of hierarchical institutions a little more intensively, and provide a framework in which problems of equilibrium will be capable of solution. In the next chapter we shall take up this question in detail.

[7]That is, the order of set-events must be maintained. If one attempts to have an individual originate *against* the direction of a set, he will have to be fitted into the other existing sets, or the lines or authority (sets) will be *hopelessly confused*.

V. AN ALGEBRAIC REPRESENTATION OF A HIERARCHY

In order to describe a system of relations quantitatively, it is necessary to deal with a large number of relations simultaneously. *Otherwise we have to take each individual in turn and work out* the equations describing his relations, with no way of synthesizing and treating the system as a whole. It is evident that the lack of such a method would seriously inconvenience us. A complete description would require an estimate of the effect of the relations to one another of the separate individuals with whom a given individual interacts. A worker in a factory interacts with the foreman and the plant superintendent, but a satisfactory description will have to include the relation of foreman to plant superintendent, since changes in that relation will seriously affect the worker's relations with these individuals. When changes take place in a subsystem such as a family or a factory, a series of modifications in rates may occur in all the relations, and we have to be able to deal with them not as sequent cause and effect situation, but rather as modifications in the mutual dependence of the system. For example, in the case of the relation of two individuals described by the ratio of the mean durations in Chapter III, we saw that after the disturbance caused by three weeks' separation, the restoration to the previous ratio took some time. After obtaining this ratio for all the pairs of individuals in a family, we want to be able to see not only how the ratio for each relation varies as a function of time and of outside disturbances, but also how such variations are correlated with one another.

The method we adopt to deal with such simultaneous variations of a system in equilibrium must also be designed to utilize the set-events which are characteristic of hierarchies. The determining effect of these set-events on the actions of individuals is as important as the paired interactions which ordinarily concern us. For this reason, the method must be based upon the analysis of sets and the description of individuals whose position in sets occupied us in the last chapter.

Rule of Components

For the first step in the development of such a method, we shall return to the analysis of relations as outlined in the last chapter. There we isolated for every subsystem a unit system; and the rela-

tions of individuals in that subsystem were then described by combinations of these unit relations. This was done by starting with an individual and following unit relations from him to another individual with whom he was in relation, then taking this person as starting point for another unit relation and proceeding to the next individual, and so on. By this process, we were able to describe the relation between the members of any pair of individuals in a subsystem. The order goes from individual through contiguous individual; in the example given to illustrate this procedure, the relation of grandfather to grandson can be resolved into the unit relations in the order, father to son *who* is father to son. We have given in tabular form (Appendix *B*) an extended description of the combinations of components describing the relations in the family system. Since this material has been worked out in detail, we shall use it as the basis for discussion in this chapter. Let us turn to the formulas given in that table, and work out the uniformities in the way these relations combine.

If we take as the first example a relative product and its converse, the relation of uncle to nephew and the corresponding relation, nephew to uncle, we see immediately that there is a definite order. In the particular instance of a man's sister's son, the two expressions are as follows:

Uncle-nephew	$(b, -c)\,(a, -b, c)$
nephew-uncle	$(-a, b, -c)\,(-b, c)$

In any other case, for example, the expression for father-in-law to son-in-law (a man's daughter's husband), the same thing may be observed.

Father-in-law–son-in-law	$(a, b, -c)\,(-b, c)$
son-in-law–father-in-law	$(b, -c)\,(-a, -b, c)$

It is obvious by inspection of the tables that this order holds true for all cases. We may define the order of compound relations as follows: *The converse of any expression for a relation reverses the order of the constituent unit relations and changes the sense or sign of the combination.* For convenience we shall call the expression for a unit relation (enclosed in parentheses) a *term* of the relation. Within any term, it is evident that the order of the components is of no importance, for we can take components in any order we

please. The given order is only an alphabetical convention. On the other hand, by the above definition, the order of the terms and the sense of the components in the expression for a relation indicate the order of the individuals in the relation.

In expressions describing tangent relations of individuals in two or more subsystems, the same uniformity is to be observed. If we take as an example the tangent relation of the foreman in a factory to the daughter of a worker, we see that the same thing follows:

foreman to daughter of worker	$(e)(a, b, -c)$
woman to foreman in father's dept.	$(-a, -b, c)(-e)$

By this rule we are able to determine the order of the terms in any relative product, and by starting with any individual, we can write down all the relations that he has with other individuals in any subsystem or system. At the same time, however, we shall need to determine for the relations of any two individuals in a system the sets in which they interact. The usefulness of such information is obvious. Not only do we want to know the way in which two individuals in different parts of a large organization are related, but we should also like to know when they meet and their relative positions in terms of set-events and hence in the hierarchy. Often in questions of precedence and so on, there is no clear rule to tell whether a given individual, say a bureau chief of a research division, is origin or terminus in the supervisor-supervisee set, if for example he has to interact with the plant superintendent. The tables of relative products worked out in the last chapter, and given in Appendices *B* and *C*, only indicate the links from person to person by which these two men can be related. We now want to find out what the order of their interactions must be. This can be derived from combinations of the terms of the relative product of the relation.

As we have seen, the relative product is made up of the unit relations of all the pairs of individuals in the sets making up a subsystem, whose order is followed to make up the constituent pair desired. Such an expression may be reduced to a single term which will represent the components describing the observed interaction of two individuals.

Suppose we observe the interaction of two individuals, for example, the uncle and nephew or the father-in-law and son-in-law.

The formulas for these relations as given in Appendix *B* represent the combinations of terms by which they are related, but we want to know what components describe the interactions of the two individuals themselves. Let us take the expression for a man's sister's son as an example and see how it may be reduced to a more simple form. By inspection of the formula on page 80, it is easy to see that the addition of the terms cancels out part of the expression. *It now becomes simply* [*a*]. *In the table of unit relations* (Table 5), Chapter IV, we see that this expresses the relation of father to son or mother to daughter; the male-female and female-male components cancel. In reducing this expression to a single component, we have indicated that the uncle originates action for the nephew in set-events in the *a* set just as the father does for his son; and this is verified in observation, for we do not find set-events involving uncle and nephew in which the male-female and female-male components are present. In the other expression given for father-in-law to son-in-law the same result [*a*] is obtained from adding the terms.

Let us take another instance of a compound relation, the relation of a man to his mother-in-law. The formula is as follows:

$$(b, -c)\,(-a)$$

by addition $(-a, b, -c)$

This expression is the same as the one given for son-mother in Table 5. One more instance will complete the illustration, the relation of a grandfather to his daughter's son. This gives the following formula:

$$(a, b, -c)\,(a, -b, c)$$

by addition $(2a)$

We may now generalize on the preceding examples by the following definition: The result of the operation of combining the terms in a relative product is obtained by adding the components of each set and cancelling those components with opposite signs. The expression is written within a parenthesis in order to indicate the term represents the relation of two individuals. We shall call this operation *the rule of components*.

From the evidence submitted above, it is evident that the uniformities in the combinations of relative products reduce them to expressions having the formulas similar to the unit relations within the

family subsystem. In other words, the components left after the application of the rule of components describe the origins of action in set-events which fix their position in interaction in sets. We are able in this way to describe the relations between in-laws or cousins to any degree removed by formulas giving the terms in the relative product, showing how the members of a pair are connected; and by applying the rule of components, we also obtain a formula which describes their interaction in set-events. The same procedure may be followed for any subsystem whatever.

Parenthetically, it may be of interest to students of kinship to point out that the terminological systems described for different peoples throughout the world follow the rule of components. Father's brother is referred to by the same word as father in many kinship systems, father's sister has the same term as mother, and so on. Variations in kinship terminology may be referred to the relative product or its resultant after the rule of components has been applied, and depend upon variations in the quantitative character of the events in which the individuals interact.

The Problem of the Form of Equations for Relations in Hierarchies

Now that we are able to predict how individuals who are several relations removed in sets will interact in set-events, we must see whether we can use our description of hierarchical institutions (sets, components, relative products, etc.) to form a system preserving the orders of interaction we have isolated. The problem is a complex one because we not only are confronted with many variables (relations), but also we want to be able to deal quantitatively with set-events and pair-events. That means that we have to frame our equations in such a way that the relations of individuals described in terms of components will be the basis of our work. This is complicated by the fact that we have to deal not only with the compound relations themselves, but also with the resultants derived from applying the rule of components. There are definite values for each of the terms in the original expression, as well as those between the two individuals expressed by the resultant itself. The complexities of the problem may be illustrated if we take as an example a single unit relation and discuss its quantitative significance.

Let us suppose that we take the instance of the relation of a man

to his wife, expressed by the formula $(b, -c)$, and assign quantitative values for each component.[8] For the purposes of illustration, we shall use the rate at which events occur, given by the mean frequency, and shall assign the components arbitrary values. Suppose that the mean frequency of events for the component b is 15 times a day while the value for the component c is 4 a day. The husband originates action at the rate of 15 times a day, while the wife originates action for the husband only 4 times a day. If we let e represent a unit event, and a subscript represent the letter of the component, the formula using these rates may be written as follows:

$$(15e_b, -4e_c)$$

The expression can be written without the e's. They are included here to remind the reader that the rates refer to events. Such a formula, by itself, is a limited description of the relations. Only by comparing these values with other values for the same relation would we obtain results of a more general interest. For example, we might compare this rate with other rates, observed at different periods for the same individuals and see whether there is any change in the rates as a function of time. We might also compare different pairs of individuals having the same relation, and see how the rates vary. But such comparisons are limited in their usefulness. What we want to be able to do is to "explain" these changes. That means that we have to see whether there were changes in other relations in the subsystem coincident with a change in this single relation. Put another way, if we introduce a change or note its occurrence in the rate of a single relation, what happens to the rates of other relations?

Let us consider a relative product having two terms. As an example, we shall take the relation of the man in the previous case to his mother-in-law. We have already assigned values to the relation of this individual to his wife. The formulas for the whole relation are:

relative product	$(b, -c)(-a)$
after combining	$(-a, b, -c)$

[8] In order to simplify the exposition, we shall neglect the fact that we have to deal with both pair- and set-events. We are here endeavoring to show how the structural order may be described algebraically. Set-events in the b and c sets obviously involve other terminating individuals, but we shall concentrate on one single pair.

We now assign values to the relations in question. In the first place, we may supplement the rates already given for the husband-wife relation with the rate of the woman's relation to her mother.

Relative product $(15e_b, -4e_o)(-2e_a)$

But if we combine the formula for the relative product by the rule of components, we do not combine the quantitative values given above, for the resulting unit relation expresses the components describing the observed interaction of the man to his mother-in-law. The values here are to be obtained by observation. Let us suppose that the interaction of this pair is at the rate of three events a week and that one may be assigned to each component in the relation. Then we may express the values for this relation in the formula (calculated on the day as a unit) as follows:

$$(-1/7e_a,\ 1/7e_b,\ -1/7e_o)$$

We have now assigned quantitative values to the relations of three individuals, and we have an example of the complexities of the analysis. The question at once arises: What is the effect of a change in any one of the frequencies upon the other frequencies represented? How may we express the interconnectedness of the rates of the relations of the individuals in question? Or to put it more precisely, in dealing with individuals related in sets whose relations have to be described in terms of their positions in sets, what form can a quantitative description take which will enable us to keep the characteristic order of the phenomena?

It is evident that the situation is unlike the simple description of a system that we discussed in Chapter III. Let us suppose that in addition to the husband and wife we had one male child living in the household with his parents. If we omit for the purposes of exposition the complication which ensues from the presence of sets, we have three relations and three individuals. The equations for origins and termini of the three individuals, when summed, equal zero, since, in a subsystem where we deliberately isolate the individuals and exclude the set-events, every origin has to be terminated by someone in the system and vice versa. All other events are outside the system. On the other hand, the given relations represent only a portion of the interaction of the individuals in question, and the equation which defines the equilibrium of an individual regarded

as a system, $\Sigma O - \Sigma R \pm C = O$, is made up of all the relations in which that individual takes part.

The present problem arises from the fact that we have two ends in view. The first is to define the individual as a system in terms of the constituent pairs in which he interacts and to treat him as a point completely determined by one or more subsystems. This latter end involves us in questions of mutual dependence more complex than those dealing with a single individual, as described in the equation above, since for a precise formulation we have to know what the effect of a change in a relation in which an individual is not interacting has upon the relations in which he does interact. In the example that we gave, in order to obtain a complete definition of the relation of a man to his mother-in-law, we have to know the relation of his wife to her mother. For the definition of his own equilibrium, in a first approximation, this may be left outside our quantitative equations.

Second, in any complete description of a system, we have to include in our definition the occurrence of set-events between the individuals making up the subsystem. This is particularly necessary since these set-events determine the order of interaction in the relations. Changes in the frequency of set-events are accompanied by changes in the frequency of the pair events which make up the bulk of the observed events, and we must preserve the order of the individuals in the sets making up the subsystem in order to obtain a complete quantitative description.

It is not difficult to imagine a satisfactory description of relations between three people in the instances which we have used for illustration. Changes in rates between small number of individuals may be treated successfully.[9] But if we should take a larger number of individuals, say those making up the family, we should find that we have to devise some way of describing in equations almost as many relations as are found in the tables in Appendix *B*. The difficulty will be clearer if we turn to the concrete example given before. We might describe the relation of a man to his mother-in-law by an

[9]Methods of analysis dealing with several variables are, of course, well known. The most useful book we have found when dealing with material in which the functional relations are unknown is Lipka's (12). A convenient statistical method for treating variations due to known causes has been developed by Sewall Wright (24) in his method of path coefficients, a modification of the method of multiple correlation of Pearson.

equation such that the resultant, after combining components, is some function of the terms in the relative product, that is, the relation of the man to his wife and her relation to her mother. Let us suppose that we also find that the father-in-law, the children of the couple, and other individuals have to be included. Then the number of relations that we have to deal with becomes very large. The number of possible pairs obtainable from any number of persons is $n(n-1)/2$. If such relations are considered to be some function of all the others, and if we regard each relation as a variable (determined by variations in frequency and time), then in a system of n variables, each variable will in general be a function of the other $n-1$. That is, if a change is impressed upon one of these relations, it will be followed by a change on the part of the others, and so on.

Such a method of treatment would demand n equations in order to describe the system. Even if we were able, in a first approximation, to determine that certain relations could be neglected, we should still have a large number of people, say six or eight at the least, whose relations would have to be expressed in equations.

The Matrix

A tentative method for the solution of this problem will now be suggested. It represents the kind of approach which will almost certainly solve the problem, whether or not the particular solution here worked out is successful. If we wish to express all the relations (to a certain degree of complexity) of individuals in a subsystem, it is possible to represent these relations in a more compact and convenient form than that of the tables in Appendices *B* and *C*. We proceed in the following way:

Let us take all the unit relations and their converses of a subsystem, say the family, and arrange them in any order. We shall call this order a sequence of relations. Using Table 5 to guide us, we write down the unit relations, giving each a number. In the family, there are 12 unit relations, if we provisionally omit all those which include the fourth component isolated, *d*, older-younger. We take such a sequence and from it construct all possible relations involving two-unit relations. We take another sequence of the same unit relations and obtain the relative product of each relation of the first and each relation of the second in that order. That is, we take a relation from the first sequence, say father to son, and we

"multiply" (obtain the relative product) this relation to a relation from the second sequence, say husband to wife. The relative product is a man to his son's wife. (It must be remembered that this kind of "multiplication" is non-commutative, i.e., the inverse operation does not give you the same result. In this case, the inverse would be man to his wife who is father to son, which is meaningless.)

		1	2	3	4	5	6	7	8	9	10	11	12
		(a)	(a,b,-c)	(b,-c)	(b,-c)	(-a)	(a, b,-c)	(a,-b,c)	(a)	(-a,-b,c)	(-a)	(-b,c)	(-b,c)
		Fa-Son	Fa-Dtr.	Hus-Wife	Bro-Sis	Son-Fa	Son-Ma	Mo-Son	Mo-Dtr.	Dtr.-Fa	Dtr.-Mo	Wife-Hus	Sis-Bro
(-a) 1	Son-Fa	A 1 1	A 1 2	A 1 3	A 1 4	A 1 5	A 1 6	O	O	O	O	O	O
(-a,-b,c) 2	Dtr-Fa	A 2 1	A 2 2	A 2 3	A 2 4	A 2 5	A 2 6	O	O	O	O	O	O
(-b,c) 3	Wife-Hus	A 3 1	A 3 2	A 3 3	A 3 4	A 3 5	A 3 6	O	O	O	O	O	O
(-b,c) 4	Sis-Bro	A 4 1	A 4 2	A 4 3	A 4 4	A 4 5	A 4 6	O	O	O	O	O	O
(a) 5	Fa.-Son	A 5 1	A 5 2	A 5 3	A 5 4	A 5 5	A 5 6	O	O	O	O	O	O
(a,-b,c) 6	Mo-Son	A 6 1	A 6 2	A 6 3	A 6 4	A 6 5	A 6 6	O	O	O	O	O	O
(-a,-b,c) 7	Son-Mo	O	O	O	O	O	O	A 7 7	A 7 8	A 7 9	A 7 10	A 7 11	A 7 12
(-a) 8	Dtr-Mo	O	O	O	O	O	O	A 8 7	A 8 8	A 8 9	A 8 10	A 8 11	A 8 12
(a,b,-c) 9	Fa-Dtr	O	O	O	O	O	O	A 9 7	A 9 8	A 9 9	A 9 10	A 9 11	A 9 12
(a) 10	Mo-Dtr	O	O	O	O	O	O	A 10 7	A 10 8	A 10 9	A 10 10	A 10 11	A 10 12
(b,-c) 11	Hus-Wife	O	O	O	O	O	O	A 11 7	A 11 8	A 11 9	A 11 10	A 11 11	A 11 12
(b,-c) 12	Bro-Sis	O	O	O	O	O	O	A 12 7	A 12 8	A 12 9	A 12 10	A 12 11	A 12 12

FIGURE 3

FAMILY MATRIX (1)

The letter *A* represents the family system. The first number in the suffix represents the first term in the relative product taken from the vertical sequence. The second number stands for the second term of the relative product, taken from the horizontal sequence, and the combined expression tells the order in which the terms are taken.

The results of the process may be represented in the form of a table made up of 12 columns, each containing 12 expressions. Such a table for the family is herewith given. It is called a matrix.

Two things may be noted about this matrix. In the first place, each term is represented by the letter *A* denoting that it belongs to the family subsystem, and we have indicated by the numbers used as suffixes that the first number and the term it represents in each horizontal row came from the first sequence, and that the succeeding number and term came from the second sequence. In the second place, a number of the quantities are represented by zero. This follows as a result of the formation of a relative product. We have seen in previous pages that if we are to obtain the relative product of any relation, we have to proceed by unit relations from individual to individual. If we take the unit relation of father to son as an example, we see that this combines with a relation father to son from the other sequence to give the expression for grandfather to grandson. If we combine it with husband and wife, we get the relation of father-in-law to daughter-in-law. If, on the other hand, we try to combine this relation with the relation of mother to son, *taking the individuals in that order,* there is no relation possible, since it represents the meaningless relation of father to son who is mother to son. We indicate the position of a nonexistent relation by the zero.

It will be noted that all the zeros occur in the upper right-hand and lower left-hand quadrants. This results from a rearrangement of the columns for the purposes of convenience and also to get all the identities, that is, the relative products which come back on themselves, in the diagonal from the upper left-hand corner to the lower right-hand corner. This diagonal represents all relative products of the type, father to son *who* is son to father. It is then evident that the order of the terms in the second sequence in respect to the first is such that each term in the first sequence has its converse in the same position in the order in the second sequence.

By comparing Table 5 in Chapter IV and the table in Appendix *B,* it is apparent that this matrix represents all the possible relative products of two-unit relations. That is, it represents all the relative products made up of two-unit relations from a given individual as origin. For example, it describes not only the relation of a man to his grandson, but also his relation to his grandfather. The same

thing is true for a woman if she is the point at which one starts. In other words, this matrix describes all the possible relations of a given complexity (two-unit relations) for either a man or a woman. Matrices may be constructed for compounds of three or more unit relations if necessary.

Regarded another way, the matrix represents all the relations in the family subsystem, and hence includes all the individuals. What can we do with this sort of representation?

Since such a matrix represents the relations of individuals in a subsystem, we have a convenient way of treating a subsystem as a unit, or so much of it as is represented in the matrix. That means that we can take the family of an individual, or the factory in which he works, or the club to which he belongs, and express the rates at which he interacts with other individuals as a system of equations having a definite kind of interrelation. The most useful way of doing this is to express one matrix as a function of another. Let us suppose that we have a series of events observed with the help of the recording device as described in Chapter III. We may work out one matrix for any given family in which each relation is measured in terms of the log slope. Using the same matrix form with the same pairs in the same positions, we set up another matrix in which the relations are given by the ratio of the summed time of silence of any slope to the total time it continues. One matrix is a function of the other, just as each group of values for one pair is a function of the other. A third matrix may then be derived to give the results of these two. Since we take one person as the point of departure, this simple matrix equation represents a complex quantity, namely the functional relation of the interaction rates of all the members of his family with his own. Similarly, we can take the men in the shipyard, in a factory, or anywhere else, and express their origin ratios as a functional equation.

From equations built up in this way, we can determine the conditions of equilibrium of the sub-system, and predict how changes will take place. We can also build up matrices to any required degree of complexity, and by following methods worked out in the calculus of matrices treat tangent subsystems together as systems of equations. In other words, with such a method we are able to describe systems of relations in a quantitative fashion.

We cannot discuss here the general properties of a matrix. They

may be secured through reference to any standard work (19). Suffice it to say that a matrix calculus has been worked out which enables us to add, subtract, multiply, and divide matrices. We can thus express the relations of matrices to one another in the form of equations. A matrix equals zero if all the elements are equal to zero. Two matrices are equal when they have equal numbers of rows and columns and every element of one is equal to every similarly placed element of the other. Further, there are rules by which matrices may be manipulated. For example, let us suppose that we want to reduce this matrix to the form in which a man, and not both a man and a woman, is the origin for all the relative products. This may be obtained by striking out all the rows in which a woman is taken as starting point. Then we have left a matrix made up of the first, fifth, seventh, ninth, eleventh, and twelfth horizontal rows.

The matrix may represent the relative products, or the resultant after applying the rule of components, or the equations which represent the dependence of the relative product and the resultant. Certain properties of the family matrix are of interest. In the first place, if we follow individual to individual we find that certain relations are expressed several times. The term A_{32} and the term A_{04} both represent the relation of mother to daughter, but they arrive at this relation through different intermediate individuals. In the first instance the relation is that of mother to son who is brother to sister. In using such a matrix, we must know whether we are expressing the equations, the resultants, or the relative products. For each element in the matrix stands for a quantitative value which is derived through observation, and the substitution of these values must, of course, be consistent.[10]

Even more interesting is the fact that the two quadrants of the matrix that are not equal to zero represent the male and female lines in the family. By examination of the relations in the upper left-hand quadrant, the reader will note that all the relations there given are relations in the male line or to the male line, whereas the lower right-hand quadrant represents the relations in the female line. This holds true not only for the relations of parents and children, but also for the relations of siblings and affine relations.

[10]Appendix *E* contains a matrix showing the overlapping of the resultants. It is convenient to know just where these occur.

We may separate the male and female quadrants treating them as units and discarding the zero quadrants as of no use. This makes the matrices easier to manipulate.

If we work out the family matrix which gives the formulas for all the terms obtained by applying the rule for components, we obtain the result indicated in Figure 4.

○	(b,-c)	(-a,b,-c)	(-a,b,-c)	(-2a)	(-2a,b,-c)						
(-b,c)	○	(-a)	(-a)	(-2a,-b,c)	(-2a)						
(a,-b,c)	(a)	○	♂(0)	(-a;b,c)	(-a)						
(b,-b,c)	(a)	♂(0)	○	(-a,-b,c)	(-a)						
(2a)	(2a,b,-c)	(a,b,-c)	(a,b,-c)	○	(b,-c)						
(2a,-b,c)	(2a)	(a)	(a)	(-b,c)	○						
						○	(b,-c)	(-2a)	(-2a,b,c)	(-a)	(-a)
						(-b,c)	○	(-2a,-b,c)	(-2a)	(-2,-b,c)	(-a,-b,c)
						(2a)	(2a,b,-c)	○	(b,-c)	(a)	(a)
						(2a,-b,c)	(2a)	(-b,c)	○	(a,-b,c)	(a,-b,c)
						(a)	(a,b,-c)	(-a)	(-a,b,-c)	○	♂(0)
						(a)	(a,b,-c)	(a)	(-a,b,-c)	♂(0)	○

FIGURE 4
FAMILY MATRIX (2)

Some of the properties of this matrix are of interest. The resultants, that is, the formulas for the relations, follow a definite order. From any element in the leading diagonal (the diagonal leading from the upper left-hand corner to the lower right-hand

corner), the row of which it is a member is the reverse in sign of the column of which it is also a member. (Rows are the quantities in a horizontal line. Columns are the quantities in a vertical line.) This is true whether one ascends or descends the diagonal. It may be left to the reader to discover that the formulas in the upper left-hand quadrant are the same as those in the lower right-hand quadrant, and the order of the rows and columns may be rearranged so that the order of elements in one quadrant is the reverse of the order in the other quadrant.

By the aid of this matrix, we are able to describe the relations of any single individual, male or female, to all individuals in a family not more than two unit relations apart in any single set. The formulas for the resultants describe these relations in terms of the sets in which they interact, and when combined with the paired events furnish a description of the interactions of individuals in a family. Furthermore, if we wish to express the interrelation of these formulas to the relations making up the relative product, we can set up a matrix equation in which the matrix of the resultants is a function of the matrix of the relative products. The complexities of this and similar problems will not concern us in this book.

In showing how to construct a matrix for any institution, we have concentrated on the method of construction with only incidental reference to the advantages obtained by its use. It is evident that a matrix formed by combinations of unit relations enables us to preserve the order of the individuals in sets, and in those combinations of sets making up the subsystem. This particular type of representation, based upon the relative products which describe the relations of any individual, may be used as a framework for a quantitative description. At various points in this chapter, we have indicated the nature of the difficulties faced in treating a system of relations. These difficulties may be reduced to three main types: First, the number of relations between individuals that have to be taken into account; second, the fact that there are two types of events that have to be described, the pair-event and the set-event; and third, deriving from the latter, the individuals in a subsystem interact in definite orders as determined by their place in sets. These orders are such that classes of individuals are origins for other classes of individuals who are common termini to the class of origins. To maintain this order, we have to include it in our description.

The matrix, then, may be regarded as a method of solving the above-mentioned difficulties. Not only may we work out matrix equations of the sort suggested earlier in the chapter, we may also work out definitions of equilibria by its use. Since the primary definition of equilibrium for the individual is provided by the equation

$$\Sigma O - \Sigma R \pm C = O$$

the constituent relations in this equation may be framed in matrix equations, and the equations may then be substituted in the above equation with the result that each term represents one or more matrices, including a matrix for the constant, C. Similarly, conditions of equilibrium may be defined for subsystems, and where tangent subsystems are to be found we may construct by rules of the matrix calculus matrices which include the tangent subsystems. This may be done, of course, both for the individual and for a subsystem. The description of this procedure cannot be included in an elementary work of this sort. Nor can we include quantitative descriptions of matrix equations. What we have attempted to do is to show how these equations may be set up, and primarily to define the matrix as a convenient method for the representation of the form of institutional hierarchies. Only by these methods can all the observed relations in institutions be represented without recourse to organization charts, whose limitations in dimensional space effectively prevent an administrator or a scientist from describing any subsystem of relations including more than two sets. Such a representation, even if it could be included in three-dimensional diagrams, would not enable us to take the final step towards which any analysis of human relations should tend, namely to describe the system of relations of individuals in a quantitative manner.

VI. SYMBOLS AND THE UNITS OF INTERACTION[11]

We shall now turn from the consideration of observed interactions of people to the question of the interpretation of the meaning of the language that these individuals speak. Up to this time we have treated the actions and interactions of individuals as the data with which we were concerned, without any attempt to discriminate between the kinds of actions manifested. We have developed our methods of analysis of observed events by using operations which describe the order of happenings between people, and we have excluded from consideration the particular words, gestures, objects, etc., the traditional concern of the student of human behavior. They were excluded because we were seeking objective definitions, operations, which would enable us to deal with the class of phenomena in question.

Since we have dealt entirely with material secured as a result of observation, it may be asked why we should undertake a discussion of semantics in a book of this sort. The reader may feel that meanings of words are entirely subjective affairs and have little connection with the facts of the interactions of individuals. We propose to show him, however, that words, objects, gestures, etc., may be treated objectively. We shall do this not by endeavoring to include words in symbolic form in equations describing interaction, as some misguided mathematical logicians have tried to do. Rather we shall show how words may be regarded as symbols referring to the interactions of individuals.

The reason for including a section on semantics in this book is simply that we consider this to be a problem of great practical importance. Most people primarily concerned with human relations, psychiatrists, social workers, administrators of all sorts, are more or less dependent for their effectiveness upon the skill with which they interpret the language of the people with whom they deal. Because of the nature of their work, they cannot depend upon long and patient observation. Decisions have to be made, many of them

[11]The point of view adopted in this and the following chapter is based upon the works of Ogden and Richards, Malinowski, Pareto, Bridgman, and Korzybski. Their contributions to semantics have aided in clarifying the problems of defining the class of phenomena under investigation, as well as in providing a framework for a systematic treatment of linguistic material and the problem of meaning. The works of these authors which were found particularly useful are as follows (15, 16, 9, 13, 4).

in a short space of time, and these decisions are very largely intuitive. That is, the individual making the decision often cannot tell you in any explicit manner the functional dependence upon which his judgment is based. The successful practitioner is one who, having viewed many cases, has made a succession of judgments, more often right than wrong; and this constitutes his experience. He draws upon this experience for each decision without being able to formulate the rules for his judgment in any exact way. The practice of medicine is, of course, the art in which this capacity for diagnosis becomes most highly developed. In the field of human relations, only the law has a comparable tradition and body of knowledge, although this knowledge has not as yet become subject to scientific procedures. The strength of the field of medicine lies in the fact that the intuitive judgments of the clinic in many cases can be tested by the exact methods of the laboratory. The development of bacteriology, biochemistry, and other exact techniques enables the judgment of the physician to be backed by precise definition. This means that in the field of practice, the doctor is able to apply tested remedies to precisely defined complaints, even though much of medicine is still not subject to anything more than empirical treatment in the old sense of the word. Such exact procedures in the interpretations of signs manifested by the patient are so far not possible in the field of human relations. Strikes, neuroses, inability to maintain jobs, or family conflicts cannot be analyzed with the accuracy that diphtheria or diabetes can. However, the basic procedures are already available.

In the sciences, the method of the definition of symbols is well understood. The labels applied are simply ways of indicating a particularly precisely described set of phenomena. These labels are conveniences so that each man will know to what the other fellow is referring. The symbols used are dependent upon operational description, and the scientist is then able to rely to a large degree upon the descriptions of others. In the first chapter, we illustrated our discussion of the operational method by the example of the construction of a map. Returning to this example, we may easily show how a scientist facilitates his procedures by relying upon the interpretation of symbols.

At the present time maps are often made by photographing the landscape from the air. Let us suppose that the purpose of the map is to describe the soils and the kinds of crops raised in a particular

area. We readily recognize various kinds of land-forms and soils by observation, we distinguish marshes from cliffs, and so on. Now we may know from actual observation that a particular kind of soil is superficially distinguished by a light brown color which is readily recognized. This soil has a very definite structure and chemical composition. When we see that a large part of the landscape over which we are flying, taking aerial photographs, has soil of this color we note it, take approximate bearings, and then later fix this fact on our soil map by referring it to the map which we have constructed from the photographs. In the same way, a chemist recognizes certain chemicals by symbols affixed by the manufacturer and by such superficial characteristics as color, texture, smell, so that he can check empirically whether, to take a rather naïve example, he is using sulphur or potassium permanganate, nitric acid or alcohol. A better example may be found in the semi-taxonomic disciplines such as mineralogy. Here the process of definition by superficial appearance (properties-taxonomy) is highly developed, and any one with a little training can quickly recognize by color, texture, fracture, hardness, etc., a large number of the more common minerals. But the precise definition is based on crystallography and chemical composition; that is, on molecular behavior observed in its structural form.

Though the scientist uses language as combinations of symbols having precisely defined referents,[12] the success of his interpretation is guaranteed by his ability to test the accuracy of the definition to which the label refers. If a chemist, for example, takes some hydrochloric acid from a bottle so labelled and puts it in a test-tube with some calcium carbonate (common chalk), he expects to obtain a reaction of strong effervescence and the formation of carbonic acid. If nothing happens, he assumes either that the bottles were mixed, or the labels were wrongly put on, i.e., the substances were not what the labels said they were, and he can make chemical tests to find out what the answer was. In the same way, the student of interaction is able, for example, to define the position of an individual called father in the sets in a family subsystem. Precise definition of phenomena is, therefore, the basis for rapid and accurate interpretation of symbols, and this precise definition involves the possibility of verification.

[12]A short-hand word for the statement "that to which a symbol refers." The term was first used by C. K. Ogden and I. A. Richards (15).

Up to the present time, the interpretation of symbols in the field of human relations has been limited to the application of the rule that the referents of symbols are not always what they appear to be. The chief development has been in psychoanalysis where it has been pointed out over and over again that the manifest content (apparent reference) of language may be widely at variance with the phenomena to which it probably refers. The significance of this discovery, known previously to sophisticates in a much less systematic fashion, has been largely lost because the criteria for the interpretation of symbols by members of the various schools of psychoanalysis has been entirely subjective. Not only that, but the interpretation has involved circular reasoning, for words are interpreted as manifestations of "complexes," but the existence of these complexes is in turn demonstrated by evidence derived from the interpretation of words. The popularity of psychoanalysis has, however, called wide attention to the fact that words, objects, etc., are symbols referring to some kind of phenomena concerning the "personality," and thus do not always mean what people commonly think they mean.

The process and rules of definition have already been worked out. In the books listed in the footnote at the beginning of this chapter, the reader will find out *how* to know whether the words he uses refer to anything. He will not find, however, except in Professor Malinowski's works, any attempt to correlate the meaning of words with the actions of people. For these authors, writing in the field called semantics, are primarily concerned with "problems of knowledge" or "the interpretation of thought," but thought as the scientist uses it, i.e., symbols with precise referents. Though many symbols are regarded as purely emotive, no attempt is made, nor could be made, to define the referents of such symbols. We shall now show how this may be done, utilizing the general outlines of the pioneer work of Malinowski, and basing our treatment upon the operations developed in this book.

When we examine any of the events analyzed in the appendices, it is evident that the interactions of individuals are made up of a wide variety of actions. Each action consists of a word or a gesture, and in many cases a considerable number of discriminable actions (which we called quanta of action in Chapter II) were manifested before a subsequent action on the part of another individual brought

to an end a single unit of action. In any single event, a large number of discrete actions can be manifested by two individuals. Within the limits of the event, however, these words, gestures, handling of objects, etc., are fixed in occurrence at a particular time and said or acted by specific individuals in units of interaction. Malinowski has called the words, actions, objects, and the external conditions of the environment surrounding the interaction of individuals, *the context of situation* (15, Supplement I).

We propose to use this term in a more limited sense than Malinowski, regarding the context of situation as representing the content of an event. This limited use of the term will enable us to obtain more precise referents in observation. The event as we have defined it represents an abstraction from the context of situation, obtained by the use of operations. In order to interpret the meaning of words and actions, we first retain these discrete phenomena in their observed place in the context of situation from which the event is abstracted. Each particular action is thus found in position in its particular unit of action. On this basis, we can go about the interpretation of language both verbal and non-verbal.

In the first place, the interpretation of meaning depends upon the relation of any word or gesture to some part of the context of situation. This relationship comes about through the process of conditioning. Everyone who has children is acquainted with the process by which children learn to speak. Words are associated with objects over and over again by the parents until the sight of the object brandished in the air calls forth the word from the child. Even more elementary associations may be formed with children too young to speak. A mother may stretch her hands and take the infant's hands in hers; and after this action is repeated many times, the child automatically stretches out its arms at the sight of the mother. The scientific description of phenomena of this sort was first accomplished by Pavlov and called the conditioned reflex. Most of his experiments dealt with the building up of conditioned reflexes and the substitution of other stimuli for the initial stimulus. One well-known experiment, commonly used as an example, happens outside the laboratory to most people who have pets. A dog is conditioned to salivate at the sight of meat. The next step is to ring a bell shortly before the meat is presented, and after repetitions of this order, the dog is conditioned to salivate at the sound of the

bell. Numerous variations of these experiments were designed, both to see how specific the discriminations could be and how many substitute stimuli could be linked to the initial conditioned response. The process of negative conditioning was also investigated, and the reader who wishes to learn more about this work will find it described in a book by Pavlov called *Conditioned Reflexes* (17). The essential fact for our purpose is that a conditioned reflex may be established if certain simple conditions in the association of stimulus with response are maintained.

If we take the instance of the dog conditioned to salivate at the sound of a bell, we have a situation similar to that we wish to deal with. The context of situation includes the sound of the bell, the sight of the meat, and the conditioned reflex of salivating at the sight of meat. Both the sound of the bell and the sight of the meat are symbols of the relation between eating the meat, the stimulus, and salivation, the response. The sound of the bell may be called, after Korzybski (9, p. 331), a second-order symbol. Most words are second-order symbols, but by the process of extending the context of situation to include more discrete sounds, action, etc., an elaborate set of linkages may take place, involving higher orders.

It should now be easy to see how words may be regarded as symbols of the interaction of individuals. Words, gestures, and objects manifested by particular individuals interacting in events making up contexts of situation come to stand for the relations of these individuals. Examples are readily apparent in any of the subsystems isolated and described in the preceding section of the book. To go no further than the family, the individual whose origins of action for other individuals are described in Table 5 is called a father either descriptively or as a vocative by two of the individuals, son and daughter, for whom he originates action. That is, this word is used in specific contexts of situation and thus becomes a symbol for the conditioned response of the interaction. As a matter of convenience in Chapter IV, we used the terms father, son, and daughter, etc., without questioning their use because the exposition was aided by such a procedure. We could have used without any difficulty letters of the alphabet, numbers, the proper names, or anything else we pleased. This would not have affected the analysis, since the components were determined through the use of definitions describing the interactions of individuals and the origins of action,

and they did not depend upon any verbal associations with the names above mentioned. After the components have been established, however, it is convenient to use such terms as parent-child, male-female, and so on, to describe them, since these terms are in common use.

In the subsystems analyzed, every individual had a number of names each of which refers to relations of others to him. Within the family, an individual is called brother by one person, husband by another, father by a third, etc. Any single individual is a point of intersection for a number of the relations of the system. At each such point the names used refer to the position of each individual in a pair within the system of relations, and to the sense or direction of the relation between himself and the other member of his pair. Since every person is a member of different subsystems, the number of such names associated with his units of interaction in the various subsystems becomes very great. An individual may be called father by one person, son by another, foreman by another, president of the Taxpayers' Association by another, and city councillor by still another. Conversely, two persons may interact with each other in different subsystems and hence apply different names to each other in each subsystem. They may be father and son in one, and foreman and worker in another. Such symbols refer to any individual of the class of all the individuals occupying similar positions in the relations of subsystems. The word *father* is a *symbol* which *refers* to a person whose position in the family is defined in terms of the components describing the relations of the family subsystem. It is used either as a descriptive term, in which case it designates that person, or as a vocative term used in addressing him by the other persons standing in relation to him whose positions must be likewise defined in terms of the components. So the *referent* of the symbol is the individual in question as he acts in recurrent events described by the same components. The same process of interpretation can be extended to other parts of speech, following the lines laid down by Malinowski (15, Supplement I; 13, Ch. 7).

Grammatical categories are ways of referring to the events between people. They organize the verbal form of the context of situation. For example, pronouns refer to what we have called the referents, namely, the individuals in the units of interaction. Thus,

"I" refer to *"him,"* the object is *"his,"* and so on. Verbs may be regarded as the class of symbols which specify the character of the events making up individual relations; they are descriptive of kinds of interaction. It will be sufficient to remind the reader that in the political organization such verbs as approve, appoint, supervise, notify, were constantly reappearing as descriptions (symbols) of the relations between individuals. Prepositions form a large and important class of words fixing the relative time of happenings and their spatial arrangement, and hence describe the order of events among individuals. Other parts of speech such as adverbs, conjunctions, and adjectives can similarly be regarded as referring to relations between individuals and the objects making up the contexts of situation (15, Supplement I).

In this sense, words and objects both become "symbols," to use the term we have already adopted in the case of words. They are both capable of reference to the event. In physiological terms, each symbol becomes linked to a conditioned response and becomes a substitute for the first order stimulus.

One of the situations where the symbolization of objects in terms of relations is most evident is in a factory. There the relations of individuals are describable in terms of their activities in association with machines, tools, and the like. Many of the names for individuals in the shoe factory are derived from the process of manufacture. Thus, a "cutter" is a person who takes a sharp knife and by the use of a die cuts the leather hide into pieces preparatory to the other processes in making a pair of shoes. Similarly, a "stitcher" is a person who stitches the pieces together with a sewing machine after a cutter has cut the pieces out, and so on. All these names, as well as the names which describe the parts of a machine or the steps in a process, are symbols which refer to objects which in turn are associated with units of interaction.

In order to illustrate how objects and words making up the contexts of situation refer to the interaction of individuals, we shall take a situation where we have already analyzed the relations. In Chapter IV when we were showing how to work out a set from a series of observations, we presented material taken from individuals in the school subsystem of a small town. From a spatial point of view, all the individuals are contained in a single building with the exception of the following persons: the superintendent, his secretary, the at-

tendance officer, and the school committee. All the other persons whose interrelations were described worked in one building, the schoolhouse; so almost all events in the subsystem occur within buildings. Going to the Bulkley school building, we observe that there is a definite and precise relation of the individuals in it to the objects as arranged in space, and furthermore the objects themselves have a definite order. The principal has an office, a room spatially separate, in which there is a desk and chair. They are spoken of as *his* desk and chair, and there are other objects, books, paper, etc.

Similarly, each teacher is in charge of a particular room, and in that room particular pupils are seated at certain points in space at objects called desks and chairs, and the teacher has her own desk and chair. Entering one room, we find that the teacher's desk is on a dais, raised above the level of the other desks in the room, and the desk at which she sits faces the desks of the pupils. There are 48 desks for pupils in the room, eight along the front of the room and six deep. Each desk is flat with an opening beneath; that is, it is made of two boards, with a back and sides. The opening is used to store books. A groove for pencils and pens is cut along the top of the desk, and there is an inkwell sunk in the right-hand side. On the wall to the right of the teacher's desk (which is in the center of the dais) the American flag hangs on a flag pole. On the wall to the left of the teacher is a clock. On the same wall there are also two bulletin boards between the windows. There are blackboards on the front and right side walls. There are also two bookcases on this side of the room, one on the side wall, and the other on the front wall on the teacher's right. Here is the door of the principal's office. A table with potted plants is under the window on the left wall next to the bookcases. On the bulletin board under the clock are clippings on science. The other board has more clippings on science and a list of books as suggested reading, also a dental honor roll with the seal of the Commonwealth of Massachusetts on top. At the back of the room on the wall near a window is a pencil sharpener. On the right of the teacher's desk there is a waste basket. On the desk are books and a goldfish bowl with two goldfish. On the door under the flag is a calendar. Writing paper used by the children is kept in the drawers of the teacher's desk.

Here in this sketchy description is an inventory of the arrangement of objects in a teacher's room. If we note some of the contexts of

situation in the room from the beginning of the day when the pupils and teachers arrive at the school, until the end of the day when the building is finally emptied, we see how the spatial order and the objects contained within are utilized over and over again for the events making up the relations of teacher to pupils. The first thing in the morning, the teacher arrives at the school, goes inside and to her room. The children remain outside playing in the school yard until 8:30 when the principal or assistant principal rings a bell, and at that signal they come in and go to their room. When they come into the room, they go to their desks and sit until the teacher calls the room to order. She then reads an extract from the Bible kept on her desk, and the children repeat the Lord's Prayer after her, with their heads bowed over their desks. Following this, the children are told to rise and repeat the oath of allegiance to the flag. The flag is, of course, hanging over the teacher's desk. After this little series of events in which the teacher initiates action and all the members of the class respond in unison, the day's work is begun.

Class work involves either what are called study periods or recitations. In the former the children remain silent and busy themselves with books and papers, while the teacher sits at the desk. In the latter, a series of events takes place. A child is told to take books and papers from his desk, and the procedure consists of the teacher's asking questions of each child. At the end of every hour, or a shorter period used to demarcate the end of one subject and the beginning of another, the teacher announces the next subject if it is in her room; or if the class is to go to another teacher, tells them that they are dismissed to go to the other room. On occasion, particularly in study period, a child wishing to get attention holds up his or her hand. The teacher then may call on the pupil asking what he wants; or in the case of a recitation, the hand indicates that the child is ready to be called upon. In some cases, the teacher responds to the child's origin; in other cases the child waits until the teacher is ready. Children are summoned to go to the blackboard and write problems with chalk, and after raising their hands they are given permission to use books in the bookcases. Certain pupils are selected by the teacher to tend the plants under her direction. Papers which have been written during class are collected by pupils chosen by the teacher; customarily, the teacher tells the front

pupil in each row to collect the papers in his row. When the end of the day arrives each child is supposed to clean up around his desk and also clean up the desk itself, which means arranging it neatly according to instructions issued by the teacher. The class is dismissed by a bell system which acts as a signal to the teacher to order the children, who are sitting at attention, to leave. Some children may be ordered to stay after school, that is, after the closing hour, for disciplinary purposes, or encouraged in some classes to stay in order to study.

In this brief listing of some of the contexts of situation in a school room, we see that the objects of the room and the spatial arrangement make up a large part of the contexts of situation and the events which occur between teacher and pupils. Origins of action commonly begin with the teacher, but in different events during the day, different objects and different spatial arrangements are utilized. To understand what any of the words or descriptive phrases that we have employed "means," that is, refers to, we have to see what the teachers and pupils are actually doing. All the multitude of commands issued by the teacher, the responses of the pupils, are associated with particular units of action in events that we may actually observe. A phrase like "stay after school" is to be defined only by reference to a series of events between teacher and pupil. In the same way, the flag and the words used in the Pledge of Allegiance repeated by the class under the direction of the teacher, associate an object and a set verbal formula, in addition to the physical gestures used in rising and saluting, with the interaction of the teacher and the pupils in events.

Not only may words and objects be referred to units of interaction, but relations of individuals made up of discrete events are referred to by many symbols, each taken from an event making up that particular relation. For example, the teacher may be symbolized by all the objects associated with her actions in a sequence of events in interaction with the pupils. So the repetition of events involving the same relation links the symbols in each context of situation, and thus we get configurations of symbols and objects. For example, in one event the teacher rings a small hand bell which produces action on the part of the pupil. On another occasion she reads from a book, again she uses a pointer. All these come to

stand for the particular event, and they come also to refer to all the events in which the teacher acts in relation to the pupils.

In other words, not only do symbols refer to relations, but the combinations of symbols refer to such referents, and when symbols become so associated, they may substitute for one another. In such cases, that is, when we have a number of associated symbols which refer to a particular relation or combination of relations, each word still refers to a particular object or action in a configuration. Thus, the words "the bell" refer to the object in question; the phrase, "ringing the bell," refers to the action of the teacher; and all the actions and objects circumscribe the place of the teacher among her pupils, her associates and others.

It must be emphasized that symbols become associated through the recurrence of events involving individuals in one subsystem or even in several subsystems. The occurrence of interaction causes stimuli to link themselves, and such substitutions may occur between symbols originally referring to widely separate events. This kind of thing happens over and over again, not only in our society, but more spectacularly in primitive societies. A common form of this is to be found in ceremonial events where objects, words, or actions used in ordinary life in events between particular individuals are also associated with ceremonial events between the same classes of individuals. In this country, the common form of greeting is to shake hands; many church and secret societies have incorporated the hand-shake into a ritual act symbolizing the relations of the members of a particular subsystem. Similarly, the use of the term "father" in the Catholic Church to refer to the priest is explicitly based on the similarity in order of action between the father and children in a family subsystem and the priest and his parishioners in the church subsystem. Many instances of this sort are to be found in the literature of anthropology.

When we observe material objects arranged in space, we must try to observe with what actions of individuals these objects are associated, in order to be able to define them as symbols. For not only are the contexts of situation made up in greater or less degree by the objects, but also, and more important, the spatial relation of objects and any process involving these objects has a determining effect upon the order of actions among individuals. It is obvious to anyone who has ever visited a factory that the process of manufacture

there employed has a major part in fixing the order of the interaction. In the shoe factory we described it is evident that the system of relations depended in large part on the method of making the shoes. Not only are there separate processes necessary to their construction, but by the division of labor between cutters, stitchers, etc., the flow of material, and concomitantly the order of the interaction, becomes fixed. This point has been made by Malinowski, particularly in *Coral Gardens and Their Magic,* and will be discussed in several future publications of material taken from modern industry. It is sufficient to point out here that the technique of manufacture, the method of farming, or the procedure in hunting or fishing imposes definite orders of interaction, largely determining set-events, and hence the sets of relations making up the several subsystems.

We have seen that "meaning" can only be determined by observing the occurrence of a word or object in a particular context of situation in which individuals interact. Once we have defined the words and objects by reference to the units of interaction, once we have seen to what components or combinations of components these symbols refer, we can then tell something about the interactions of the individuals in question.

The purpose of this careful analysis of the meaning of symbols, examples of which we shall take up in the next chapter, is to obtain information about the events in which the individuals talking have taken part or observed others. Since the meaning of the symbols is in some sense special to each individual because the particular referents to which he refers by certain words may differ widely from person to person, the use of symbols to facilitate analysis can only be used in certain cases of well-defined terms like some of the nouns.

For example, if we know that the word father refers to an individual or class of individuals who originate action for particular people, who terminate action for certain other people, and whose relations in the family system can be described by certain components in regular combination, we may then assume that when the word is used by the individuals for a family relationship, the same referent is symbolized in each case. We do not need to construct the sets for every family before allowing ourselves to use the formula for the father-son relationship. But other words whose referents cannot be defined in standard terms, that is, those referring to the quantitative character of relations, are personal to each individual, and

hence the referents for that individual have to be established. Once this is done, we may use information from this individual *only* as an indicator of events between individuals. The same word used by another individual must also have its referents established. For example, if two men say, *"I don't like Jones,"* the referents for the phrase "don't like" may involve entirely different events and hence will have entirely different meanings. Only patient investigation will establish what Mr. *A* and Mr. *B* each mean by such a phrase.

From this point of view, linguistic material of all sorts, as well as the description of objects associated with the interaction of individuals are only aids to analysis. They enable us to determine the operational referents of the symbols used by any individual, and we may use material of this sort to supplement observation of the actions themselves. In the first section of this book, we used samples of this material, particularly in the case of the General Laws of Massachusetts, and also in the words of informants. But we could not have used such material unless we knew what such symbols as "supervise," "inspect," etc., actually referred to in the observed actions of individuals.

In other words, the student of interaction is not interested in understanding "language" per se, but rather in analyzing it to help his understanding of the relations of people. The evidence afforded about the order and quantity of interaction in various relations of an individual enable him to make hypotheses which can then be checked by observations.

The analysis of language, then, is simply a rough way of ascertaining the uniformities in the interactions of individuals, just as the appearance of a mineral is used to classify it. Much of the material is fairly simple to use; that is, we can quickly define the referents and be sure to what they are referring. On the other hand, many symbols refer to various compound referents, and this material must be used with greater caution. Essentially, however, any use made of the material is only a shorthand method of facilitating the important task of describing systematically the interactions of individuals. The only justification for the use of symbolic material is that it enables us to extend observation to the point where we can use the descriptions of others, whether they are scientists or individuals who are being studied, as statements which are more or less accurate representations of the systems of actions and inter-

actions which form the referents for the symbols in question. Any general conclusions drawn from the interpretation of language must be submitted to the same rigorous tests used in quantitative analysis. We cannot depend upon our subjective evaluations of the feelings or sentiments of the individuals whose words we record. The analysis of symbols must constantly be referred to demonstrable happenings in the interactions of individuals, and these are the only basis for whatever meaning there is to be assigned to the statements of people.

VII. THE ANALYSIS OF THE CONTEXT OF SITUATION

In our method of analysis of the interactions of individuals, the kinds of action are of secondary interest. Throughout the first two sections of the book we treated systems of relations without classifying the actions composing them; and in the preceding chapter we saw that classifications of actions (symbols by our definition) are useful only in so far as they supplement the observations of the investigator. The words of informants, the objects that they use, and the various kinds of muscular activities that may be distinguished are treated as symbols of the relations of individuals. By examination of the contexts of situation in which they take place, we ascertain to what relations of individuals these symbols refer. The referent of a symbol has been defined for the purposes of analysis as an individual in interaction in an event with other individuals. If we are to treat material (description of events) secured from informants in order to extend the evidence of observation, we must develop an objective and precise technique. On the basis of the method outlined in the last chapter, we shall take up examples of descriptive material from interviews and see how it may be analyzed.

In developing a technique for the analysis of symbols, the chief problem is to establish specific referents for the symbols that occur. As a matter of experience, we know that there is wide variation in the precision of language. Individuals are rarely consistent in using specific symbols for specific referents. In some cases an informant may be very precise, for instance in describing the order of the process of manufacture in a shoe factory; in other cases this precision is interspersed with vague terms, single symbols with undefined general referents, and all the various permutations and combinations of language and rhetoric which are the special province of semantics.

In the preceding chapter, we saw that many symbols referred directly to specific referents in subsystems. A particular subsystem can be conveniently designated through the use of a number of symbols referring to specific individuals, their component relations, and the associated words, objects, and conditions[13] of the contexts of

[13]A condition, in this sense, refers to such aspects of a context as time, space, state of the environment, weather, etc., which are not properly included under objects.

situation. In this way, a subsystem is likewise a system of particular terms. The terms are interconnected in the same manner as the referents to which they refer; and we can speak of a terminological system, without loss of precision. For a terminological system can be referred at every point to the subsystem of relations on which it is based and which it reproduces.

This correspondence at all points of terminological systems with the subsystems to which their terms refer is evident in the several tables giving formulas already presented. It is necessary to make certain that this correspondence is traced in detail, and particular terms referred to their referents. When a person speaks of his uncle, for example, we must ascertain to which of the individuals within the subsystem the term refers and in what manner it expresses the relations circumscribing that individual. Even for such an apparently unambiguous term as the English "father," the exact referent must be specified according to the context and to the system in references to which the symbol is employed. To compare this term with an analogous one in another language, without comparison of the particular referents of each term in its own subsystem leads only to endless confusion. A father in a family is a different being from a father in the church. A father in a patrilineal society is quite different from a father in a matrilineal one. The differences are to be explained only by determining the different positions of the individuals to whom the terms refer in the particular system of relations out of which the terms are drawn.

For the purposes of analysis, we have to work out a kind of dictionary of terms for every system. When the referent does not fit our dictionary definition, as in the case of father in the church, we must secure evidence of the use of the symbol in observed events. When this is done, we are able to refer each use of a symbol to its referent. In so doing, it should be pointed out that we are not interested in dealing with every word that appears as much as we are in using them to obtain statements about the relations between individuals, and hence about the way events take place. We shall, for this reason, neglect a detailed examination of the grammatical structure of sentences, and we shall investigate only whether or not we are able to refer the symbols to their referents; and particular objects, gestures, etc., to their contexts. What we include and what we exclude, then, depend upon the way we want to use the

material. Since we shall use it only to extend our observation in order to describe as many events between individuals as possible, we shall exclude a great deal that the linguist or student of semantics would find of interest. Nevertheless, the procedures of semantics and our own investigation are alike in that they both require the systematic definition of words by referring them to the relations of individuals.

Because terminological symbols of this kind refer immediately to individuals in relation, it is convenient to begin analysis of linguistic material by isolating these symbols. Let us take an example of a statement in an interview and italicize the words which refer to relations:

> After a while *we* got to making money, and *we* got a horse and wagon. *My father* came to *me* and wanted to go in with *my uncle and me*, so *I* made the whole thing over to *them* and let *them* run it. *I* gave it to *them* outright. That went on for about three or four months, and *they* got to disagreeing. So *my father* came to *me* and said *he* would like to sell his share of the business and get out. *I* said, "Why don't *you two* come down to the *house* tonight, and *we* will talk the whole thing over and see if *you* can't get along together."

The words in italics in this quotation are the nouns and pronouns which clearly refer to relations between individuals. In the first place, we know who the informant is, and this known referent immediately fixes the others. That is, we know that the father is the father of the informant, and the latter is the nephew of the uncle mentioned. In order to find out which particular individual is denoted by uncle, we must ascertain from other evidence who was the informant's business partner, or else what relation was referred to of all the possible uncles listed in the formulas in the table in Appendix *B*. In the same way, if other individuals are referred to by their proper names in interviews, we may fix their relations by taking them as starting points.

Once we have determined what words refer directly to relations, we can then use the various classes of words such as verbs, prepositions, adverbs, and conjunctions in order to delimit the events and determine the origins of action. In the above example, the phrase, "*I gave it to them*" tells us that the informant originated action; in the first sentence, the lapse of a period of time during which events

occurred is indicated by the phrase *"after a while."* Furthermore, we often find words such as *"tonight"* or *"three months"* which tell us more precisely when events occurred, how often, and how long. Such evidence will be, of course, some aid in the quantitative description of relations, a matter to be discussed later. Once we have gone through an interview in the way indicated, we are left with a residue of words which cannot be referred to referents so easily. Their treatment depends on the preliminary delimitation of events.

We may represent the analysis of this bit of interview material into events in the following table:

Sentence one: Sequence of events of unspecified duration after the previous event (in preceding paragraph, not given here). Symbol of referent, *"we,"* refers to informant and his uncle who is his business partner (from earlier explicit statement of informant). *"Got to making money,"* a sequence of events; *"got a horse and wagon,"* probably a single event. Referents not specified.

Sentence two: Event when informant's father came to him; a series of events probably involving tangent relations with lawyers, etc., *"I made the whole thing over to them."*

Sentence three: Refers to second event in previous sentence.

Sentence four: Sequence of events, duration three to four months, symbol of referent, *"they"* refers to uncle and father.

Sentence five: Event when informant's father came to informant.

In this instance, then, there are several events which are fairly clearly delimited, and other statements in which the symbols refer to sequences of events without specifying the constituent events. In this frame of the events, the informant is referring to the interactions of individuals. In order to describe these relations we possess two kinds of information: first, the evidence of origins of action in events given in the interview, and second, our dictionary of symbols and their referents. This dictionary is the result of our generalizations from observation from which we have determined what the systems of relations are; and from hearing words used in contexts of situation, we know what words refer to what referents in relations.

Let us consider the relation of the father to his son in the above incident. The context clearly indicates that the father originated action and the son responded. If we turn to the formula for the

father-son relation (see Table 5), we see that a single component describes the relation of father and son. We may, therefore, assign the event in the interview to this relation. There are two other relations which are clearly referred to: the first, the relation of nephew to uncle; and the second, the relation of the man's father to his son's uncle. The context does not tell us what the formulas for these relations are. But from other evidence not collected at the time of this interview, we find that the uncle referred to is the man's father's younger brother. The relation of the father to his son's uncle is then the relation of older brother-younger brother. Looking up these relations in our dictionary, we then substitute the formulas for these relations. Finally, one other relation is clear: the relation of business partner to business partner.

In the second group of events in Sentence 2 and in Sentence 3, it is clear that the informant originated action for his father and his uncle in giving them the business. This must be assigned to another subsystem, namely, of the business establishment. This completes the relations which are clearly stated. But there are several situations involving events which make up a residue of unspecified referents. In the first sentence, the informant tells us that he and his uncle started *"making money"* and *"got a horse and wagon."* Here the relation of the two men includes earlier relations (also not stated in the excerpt) with customers. These relations are associated with objects in the external environment, i.e., the horse and wagon. They comprise the events between the two as well as events between them and their customers. Therefore, we may restate the matter: In the interaction of individuals selling goods, there are associated objects, so that some of the contexts of situation in these relations involve a horse and wagon and goods. Furthermore, an extended analysis is required of the term *"making money."* The term must be referred to the relations of individuals; first, those of the informant and his uncle and their customers, involving such acts as the delivery of goods to them and receiving money from them, and their frequency; second, those of the informant and his uncle and their wholesalers, involving the transfer of goods and money again in separate events, and recourse to account books where further transactions are recorded.

Finally, there are a few other statements which cannot be referred to the actions of individuals immediately. The statement that the

man's father and his brother, as partners, *"got to disagreeing"* does not give us any precise information about the events which are symbolized by this phrase. And again, the phrase, *"let them run it,"* i.e., the business, involves a much more precise description analogous to that suggested in the discussion of the phrase *"making money."* On the other hand, the phrase *"share of the business"* refers to the relation of partners, although it is not precisely described in terms of the orders of interaction in the enterprise.

In this analysis of a bit of interview material, it is apparent that we are confronted with evidence to which precise description of referents and their relations in events is intermingled with general statements which are not precisely referred to the interactions of individuals. By analyzing it in the way that we have, we are able to use the material as a description of some of the events taking place between the individuals in question. But much of it is only intelligible by reference to other events in which individuals interact, and where we can find out through examination of the contexts of situation what the words here used actually refer to. As we saw in the preliminary analysis of the phrase *"making money,"* this demands a detailed description of the relations of referents referred to in this case by a few words.

But the foregoing considerations also indicate how language is used by people in any society. For although the scientist who is dealing with the statements of informants has to establish the referents of symbols by this lengthy process in order to use them as supplements to his description, the informants themselves use such symbols as having known referents. Most people would be able, if pressed, to tell more or less precisely what the phrase *"making money"* referred to in the interactions of individuals. This phrase is used as a shorthand way of referring to a very complex set of interrelations of individuals. In the same way, the other symbols a man uses may be referred to their referents. But he assumes that the listener is also acquainted with these referents, and hence that there is no need to go into more detail. The scientist, on the other hand, cannot assume the referents of symbols which he finds employed, and his treatment of the language recorded is based upon this need for precision.[14]

[14]Malinowski (13) refers to the need of securing many statements, a thousand if need be, in which particular words are used in order to define meaning precisely.

The use of language by persons in a community is even more clearly brought out if we examine cases of material gathered by observation of the actions of individuals who are interacting in events. The preceding instance was taken from an interview, that is, from a record secured from an informant whose only interaction at the time was with the observer. It represents material which is narrative in nature. The informant is describing past events in his life, and this act entails greater probability of the use of words having specific referents since the observer is unacquainted with the events being referred to. If we select material secured through observation, where two or more persons in a community are in interaction, language very frequently has a different aspect.[15]

The following instance is secured from an informant who, after being suspended from membership in a club, has gone to get advice from an older man, a member of the organization, and one of the officials. The older man is addressing the younger:

> *Older man:* "Well W., I want to talk to you like an old Dutch uncle. Your father and I have been the best of friends for years, and I don't believe there is a person in town who would not say the very best things about *J. Q. W.* Certainly, you want to grow up to be a successful figure in the community, don't you? Don't forget you have obligations now, a wife and child. You don't want to do anything that is going to make them ashamed of you."

This quotation represents a single unit of action in an event in which two individuals are in interaction. It may easily be seen how different it is from the example already analyzed. There is no description of events, no origins of action, nothing of the sort already described. Rather the unit of action is made up of words and phrases such as *"old Dutch uncle"* . . . *"say the best things"* . . . *"successful and respected figure"* . . . *"obligations"* . . . *"make them ashamed,"* in connection with terms of relationship. What are the referents of these words and phrases?

It is evident that the process of establishing the referents of these symbols is the same as that already followed. For example, let us

[15]Much language in interaction is easily referable to events, for example, words involving orders, directions, etc., in a process. As an example, see Malinowski's description of language used in a fishing expedition, or again the way infants learn to use language (15, Supplement I).

take one which is explicit in the context, namely, the word *"obligations."* We see that the referents of the word are stated when the speaker refers to the wife and child as the obligations. That is, he is referring to the relations of the younger man to wife and child. From further evidence, by reference to our dictionary, we find that the word refers to the origins and termini of action in events making up relations in the family system. The individual is urged to be *"successful"* because he has to maintain his interaction rates with his wife and child. For a symbol of "success" he is referred to his father as partial referent of the word. In the first part of the context the speaker refers to his relation to the young man's father, and finally, in the beginning of the next sentence to the young man's own relation to his father. In other words, he is referring to part of the system of relations by this use of words.

But he does this by using symbols which refer to the character of the relations. What we mean by character was indicated in the previous example where the phrase *"making money"* could be defined only by referring it to the system of relations which made up the business, and furthermore to the quantitative description of the events making up each relation. No extended analysis was possible at that time, nor is it possible here. It will be clear that these are the referents of the symbols if we give part of the evidence that is needed to define the word *"successful"* in terms of its referents. Obviously, the father referred to is successful, and by describing the relations of the father to others, we partly establish the referent of the term. But in a later unit of action in the event, the younger man asks the older what his conception of a successful man is. The older man replies:

> Well, I'll tell you who I think is a successful man. Take *R*. He's got a good business, fine family, good home, respected by everyone. Believe me, you, I, every one of us would like to have it said about us as we walk down the street, "There goes so and so, he's a real man, a success."

Here, then, the referents are a little more explicitly referred to.

We see that part of the referent comprises that set of relations symbolized by a *"good business,"* another by the system of relations referred to by *"fine family,"* and so on. A description of the system of relations of *R* as well as of the relations of the young man's father

would furnish a more precise definition of these referents. But the significance of this example lies not in the lack of precision of the referents nor in their complexity, once established. Rather it is to be found in the fact that the symbols refer to the occurrence of events making up the relations of individuals as compound contexts. That is, the relations of individuals in combination having a particular pattern of recurring events become compound referents which are symbolized by words such as *"fine," "successful,"* and the like, and they then become symbols of the interactions of other individuals in similar systems of relations. Thus, the phrase, *"making money,"* whose referents we have indicated very briefly, would make up an important part of the referents of the phrase *"good business,"* which was used in this example. So *"making money"* is something that everyone who wants to have a *"good business"* will try to do.

In other words, we see that terminological systems of symbols refer not only to the combinations of referents in subsystems, etc., but they also refer to the kind of recurrent pattern formed by the events which constitute the relations. Being a *"successful man"* in the dictionary meaning of the speaker involves relations having different sequences of events, with differing rates, from that combination of referents referred to in the dictionary of the same individual by the word *"failure."* This difference in the sequence of events is established by quantitative description of the relations, and hence ultimately by observation.

The way in which a terminological system or systems come to refer to the pattern of events in relationships is even more obvious when we consider ceremonial language. Here language is prescribed and traditional. The same symbols are used over and over again, referring to the same contexts of situation. Since the use of the same symbol is obligatory in connection with a particular event or series of events, the precision of the conditioning is much greater than in the case of the words previously discussed in the earlier examples, and this in spite of the apparent vagueness of the referents of many of these words.

If we select part of the record of the funeral service for a deceased member of the American Legion, we see that the nature of the symbols employed is similar to that in the last instance analyzed. For example, in the last part of the service at the home of the dead member, the Commander says:

> We are proud today to honor the memory of our departed comrade. We recall his faithful service for his country and God. We remember his comradeship within our Post and his loyalty to the traditions and ideals of the American Legion. We do him this last honor and bid him this last farewell.

This unit of action combines words which can be referred to referents in relations with other words much more vague in their meanings. The relation of commander to comrade, and member of the organization (comrade) to comrade are easily established. Similarly, the references to the Post and to the Legion have quickly determined referents. But most of the other words used, such as *"honor," "faithful service," "loyalty,"* cannot have their referents established without referring them to other events in which these words are part of the context of situation.

The way that this can be done may be shown by consideration of two words, *"honor"* and *"comradeship."* The first of these words is used in two places in the context, in both of which the referent is to the action of the members of the Legion towards the deceased member. We may provisionally define the term by saying that the interactions of the members of the Legion during the funeral are the referents of the symbol; for it is specified that this action takes place *"today." "Comradeship"* is more easily referred to its referent. From its occurrence in other contexts, it is evident that it refers to all the events which mark the comrade relation of members of the Post and is another instance of a symbol referring not only to the relation but also to its constituent events. In the same way, by securing contexts in which the other words are used, we shall be able to refer them to relations between individuals. Thus, *"service," "loyalty,"* etc., are words which will be found to have the same kind of referents.

Not only do these symbols refer to events which have taken place, but they also occur in conjunction with events going on at the time, and hence form part of the context of situation. The same thing was true of the other instances, and we saw that some symbols could be defined in terms of the referents in the events as they occurred. *"Honor"* was referred to the actions of the members of the Legion as they took part in the ceremony. Similar treatment can be accorded the objects included in these contexts of situations, which must be regarded by our definition as symbols.

Let us take a simple instance. In some of the ceremonies of the Legion we note the use of a wreath. We also note that the wreath is included on the shield of the Legion. In order to determine the referents for this wreath, we ask ourselves in what context of situation between what individuals is the wreath to be found. If we examine the ceremonies that take place on Memorial Day, we observe that certain events in which the members of the Legion interact take place at a boulder on a plot of land which forms a triangle between two roads. In these contexts we observe that after certain preliminary events, the Commander, standing with the Chaplain facing the boulder says: *"Comrades, attend Memorial prayer,"* and the Chaplain then reads a prayer from the manual. Chaplain:

> Eternal God, we thank thee for this hallowed soil. Make us worthy, we pray thee, Oh God, of our heritage of pride through all these years to come. In memory of these, our dead, may we pledge to our beloved land the same service and the same devotion in time of peace. Oh Lord, who maketh war to cease throughout the ends of the earth, secure for us evermore the peace for which our comrades died, Amen.

When he stops talking, the Commander takes a small green wreath and walks up to a marker which has an American flag on it, kneels, puts the wreath over the flag, taking off his hat as he does it. After this, the firing squad fires three volleys, and the rest of the ceremony follows.

We now find out in what other situations wreaths are used. In other events, taking place on the same day or the day before, every grave having a Legion marker is decorated by Legion members with a new flag and a wreath. Each grave, of course, has a stone with the deceased individual's name on it; and in the same way, the boulder at which the ceremony is held is marked with the name of a man who died in France.

In each of these contexts of situation, we see that the events involve the interactions of individuals having the same relation to each other, and the associated objects are the same, that is, the wreaths. We may say that the wreath is a symbol which refers to the relations of members of the Legion to one another in two different contexts: first, the decoration of the individual members' graves on the day before Memorial Day (and sometimes in the morning of that day), and second, the decoration of the Memorial boulder.

In the first case, the actions in the context of situation are limited to the act of decorating, the command to the firing squad, etc., which are repeated at each grave. In the second instance, which occurs at only one place, the boulder, these actions are repeated, and are associated with other actions in which language is used having referents of the generalized type that we have already dealt with. In this ceremony, the symbolic phrase, *"in memory"* refers to the actions of the members of the Legion who are spoken of as *"pledging . . . service and devotion to our devoted land."* Symbols with similar referents are used in the quotation from the funeral service where the members are referred to as *"honoring the memory"* of the deceased by their interactions in events at the funeral. It is evident, therefore, without any more extended analysis, that contexts of situation become compounded by the aggregation of symbols having referents in the same relations but in different events. Likewise, symbols having different referents appear in the same context of situation, and in this way relations in the whole system are referred to, or relations in different subsystems. The referents of the symbol *"successful"* in the instance of the older man speaking to the younger illustrate this. Similarly, in this ceremony, such symbolic phrases as *"service to country"* have compound referents.

Thus, in order to analyze the statements of informants, the scientist or administrator has constantly to be on the alert, not only for the orders of action and the relations of the individual talking, but also for words symbolizing the quantitative character of these relations. We have seen in the last instance analyzed that the referents of the symbols involve not only the orders of interaction in the relation as abstracted in Chapter IV, but also its quantitative character. In the previous instance, we referred to the recurrent character of the events. The student must also be on the lookout for situations in which a marked change in the order of events is symbolized. The character of these changes, like the character of the constant manifestation of events, can be fully treated by quantitative methods based on observation. But in the analysis of language we cannot be precise. We can only give a qualitative examination of the contexts in which these changes in relations are referred to.

We must consider, in addition to changes in rate in the interactions between individuals, the beginning and end of these relations. These cases are referred to in ordinary language as birth, marriage,

and death, joining a club or a church, graduating from a school, and so on. The occurrence of such changes demands the reformation of the relations of individuals. If we turn back to the representation of the unit family system in Table 5, it is evident that death ends the interactions of the others with the deceased individual, and sets up changes in the occurrence of events between those who remain. In a different way, birth and marriage involve such changes. In these cases, new individuals are brought into propinquity with the old, and new interactions forming new relations are instituted. In marriage, of course, the changes involve numbers of individuals, because two similar subsystems are interrelated, and tangent relations are formed between the members of the families of the man and woman. There are internal changes in rates in each subsystem as well as changes in the tangent relations between the several subsystems.

When such changes are noted in the recurrent events making up the relations of individuals, we speak of a *crisis* taking place in a system or subsystem. That is, a *crisis* is that situation in which the events defining the relations of a system undergo a very marked rate of change.

If we observe the events which go to make up such a crisis, we find that not only are they more frequent within any subsystem, but they also involve similar changes in the tangent subsystems. If an individual is a member of several such subsystems, say clubs, churches, business organizations, and so on, besides the family, and changes take place in his relation in one subsystem they are accompanied by changes in his relations in all the tangent subsystems. The interactions taking place during such a crisis have been generalized by Van Gennep in his term, *"the rites of passage"* (23). We shall use this term for the sequence of contexts of situations marking the change, and reserve the term *"crisis"* for the changes in the events themselves.

These crises are sufficiently dramatic in nature to be emphasized by informants, and the train of events making up the interaction in all the relations of an individual can generally be elicited in some detail. In therapeutic work, for example, such crises are milestones which are sought out for the light they cast on the adjustment an individual makes to them. In our terms, they represent a change in the state of the system, a disturbance in the equilibrium, and

commonly a return to the quantitative values of the previous state, even though different relations are substituted to carry the interaction. Less marked changes in rates are also significant and commonly may be determined through a careful consideration of the symbols an individual uses to refer to them.

In Appendix *D*, we have given two cases as illustrations of the way in which individuals describe these changes. In the first, a social worker describes the changes in the relations of a carpenter and his customers and employer over a long period of time, consequent upon changes in the quantitative character of his relation to his wife. The informant says:

> I can remember going to the house and hearing her carrying on fit to kill. She had a high voice anyhow and when she got excited, which was very often, it went higher and shriller than ever.

Changes in the family subsystem, consequent upon the increasing origins of the wife to the husband, involved increased interaction of the father with the children and decreased interaction on the part of the mother with the children. These changes in the relations in the subsystem accompanied changes in frequencies of events in the tangent subsystems.

For example, in the illustration of the carpenter given in Appendix *D*, the informant describes changes in rates (not precisely, of course) within the family which were followed by changes in the work relations of the carpenter. These changes in number of events and their duration in his relations with customers were followed by changes in the relation of the employer and the carpenter which finally resulted in the loss of the job. Similarly, the Jewish informant, also quoted in Appendix *D*, contrasts the high rate of interaction of members of the family on the Sabbath *"in der Heim,"* with the low rate of interaction here in this country, and states that it is partly due to the necessary interaction of his children in a tangent subsystem, the store, where they worked.

The analysis of these cases, given in Appendix *D*, may be made in terms of the same theory of the equilibrium of a system which was discussed briefly in the chapter on *Measurement*. That is, a system or subsystem is considered to have attained a state of equilibrium if the events in the relations have stabilized rates.

Given this theory of equilibrium of a system, when disturbances of these rates take place, as in the instance of the increasing origins of the carpenter's wife, a balance is obtained by the carpenter increasing his origins to his children. This is associated with a changing rate of interaction, as well as with the changing ratio of origins in the relations. In the schematic analysis which follows the interview in the appendix, we have described the history of the carpenter as made up of four phases, and the comparison of the Sabbath in the old country and its celebration here, as seen by a Jewish informant, in two phases. The rates assigned are, of course, arbitrary, and the use of high, medium and low is only to indicate what seems to be incontestable in the analysis of the language, namely the direction of change of the rates.

In this instance, the reader may also see the wealth of symbols associated with particular subsystems of relations. The beauty of the Shabas, the excitement, the shining candles, etc., and the gloom and every-day feeling after the Shabas was over indicate how the symbols and events to which they refer have "emotional" aspects which, as we have indicated earlier, are physiological in nature. For the thing which differentiated the *"Shabas in der Heim"* from the Shabas in America was the inability of the girls to give up their participation in outside (tangent) relations.

> So already there are in the family two strings pulling against each other, and if they work they also do other things they shouldn't do, and already is the Shabas broken in this house. It is not a living thing, but a dead corpse.

The understanding of the referent of the word *"Shabas"* involves the quantitative description of the interaction of individuals in the family and its tangent subsystems.

Administrator and scientist alike, when dealing with language, are forced to ascertain as precisely as possible the referents of the symbols of the people whose interactions they treat. That the occurrence of events can only be spottily described, that many symbols will have incomplete referents, is a difficulty which will always be special to this sort of investigation. On the other hand, much can be done by such methods. Rough diagnosis and classification of situations will enable the administrator to base his own actions upon them, and should help the investigator to make a preliminary survey of a situation with which he wishes to deal. Although more accu-

rate work and hence greater predictability is dependent upon the use of quantitative methods, the accurate use of semantics, with all its limitations, is for many purposes sufficient for administrative decision.

With this very summary description of the analysis of language, we must close our discussion. We have indicated in the previous chapter how we intend to treat the words, objects, muscular activities, etc., making up the contexts of situation from which we abstract the events. We saw there, and in the treatment of examples of material from contexts of situation in this chapter, that we could regard the material in the context as symbols of the relations of individuals. If we took this view, we could use language to supplement the description of events which we, as observers, were able to secure.

During the course of this discussion, we also took occasion to analyze different samples of interview material, and it is obvious that there is wide variation in the precision of language, and hence in its usefulness to the investigator. Most of the language of people in a society occurs in the units of action making up events. The symbols used refer to the relations of individuals in compound contexts of situation and hence have complex referents. Although the individuals in the context of situation may be able to specify the referents, these symbols are to the scientist vague terms which require observation of their use in other contexts before they can be referred to specific relations of individuals. And in fact, such referents often vary from individual to individual.

Finally, we saw that the compound contexts of situation to which symbols referred included the relations making up an entire system, and the referents of symbols were not simply the positions of referents (individuals) in sets, but more commonly referred to the rate of the events which made up these relations. These events occurred in time, and a relation or complex of relations in a single subsystem or in a whole system had certain quantitative characteristics. As a matter of observation, we could detect that sometimes the relations between individuals had a constant character, and at other times they were subject to change. We called rapid changes in a system a *"crisis."* We saw that the events between individuals in such a crisis were associated with symbols making up the contexts of situation (rite of passage). These symbols used in the rites of passage refer to the previous contexts of situation which make up

the relations of individuals and to the quantitative character of the events by which they are described.

We have now indicated the method by which the contexts of situation may be analyzed. Upon evidence as a result of observation, and from the analysis of the statements of informants, referents of the symbols (words, objects, gestures, etc.) may be obtained in the interactions of individuals.

VIII. CONCLUSION

We began this book with the statement that we intended to outline the foundations for the measurement of human relations. During its course, we have seen that we might provisionally describe the relations of individuals in terms of their interaction in events. On the basis of this definition, we were able to introduce different ways of analyzing the structure of institutions by isolating sets of relations making up subsystems. By combining the quantitative description of the events together with the order in which individuals interact, we outlined the framework for a systematic description of human relations. Finally, in the last section we saw how we could interpret the statements of people in order to obtain an accurate but qualitative description of past events as a method of diagnosis for those primarily concerned with practice.

Our procedure has been based upon the assumption that the methods of science could be applied to the phenomena of human behavior. That meant that we had to introduce operations and definitions which could be applied to the results of observation. We excluded from consideration anything which could not be based upon these definitions, and hence excluded much that others have considered of importance. We did this in an effort to obtain a useful method of describing the facts that we were investigating, and did not consider that we could treat scientifically the kind of material not subject to observation. The method developed, therefore, is one which seems to accord with the facts. It may be applied by anyone. In its application, new methods are bound to appear which will be more convenient and more exact. It is our hope that others will test the hypotheses of this book in order that we may secure a greater body of precise knowledge, rigorously obtained, which will aid the development of a science of human interaction.

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APPENDIX *A*

1.

In the following incident the principal of a grammar school has asked the assistant principal to have certain pupils sent up to his office by their teachers. This takes place just before graduation.

> *Principal:* "What are you going to do if you don't graduate, Harry? Clam?"
>
> *Harry:* "I don't know."
>
> *Principal:* "Well, Harry, it has done you good to come back another year. You're going to take a commercial course, aren't you? You've put on a pretty good show except in English. You've got too many crude Marshside phrases (Harry laughs at word 'Marshside') like 'ain't got' and so forth. Your capitals are fine, and your punctuation is better. You'll get along fine if you remember that. Aside from being very poor in English, you deserve a chance. I've got all the confidence in the world that you're going to be all right. If you don't watch your step, though, they're going to put the skids on you up there at the high school. You've got to watch your English anyway. You're not going to be in Marshside all your life. We understand you down here, but up there in the high school they may not, and well, you'd better take some advice from your older brother. You're not any smarter than he is, are you?"
>
> *Harry:* "No."
>
> *Principal:* "He mastered his English. And another thing, you've got to do your homework. All right, run along."

Harry goes out.

2.

I (the observer) went back to South Street, and noticed a gang of young fellows standing on the far side of South Street near the intersection of Cross and South. As I passed them, one of the fellows, a red-headed Irishman, walked away from the crowd and called to me. I stopped, and he said he was feeling bad and asked if I'd do something about it. He was half drunk and rather incoherent. Said something about he was trying to get his brother to go to church, and that he'd stolen a bottle of salad dressing and was going to have some sandwiches, would I help him out.

> *I said,* "All right, where shall we go?" *He said,* "I know a place, if you don't mind buying them." *I said,* "All right, sure." He then went down the street with me and turned up Jones Court. *I said,* "What have they, can we get beer?" *He said,* "Well, maybe so; do you want beer?" *I said,* "I'd rather

have beer at this time in the morning though hard stuff will be all right."

We came to the house, and he went to the door and walked in I followed him. A man was sitting in the kitchen, slumped dowr in his chair before a dish of soup. He was apparently drunk anc all in. A woman across the table from him was eating heartily. The room was filthy with quite an odor about it. There was a large coal or wood stove with several pots and stuff on it. The table was dirty, and on it was a bowl of chicken. The man and the woman each had a bowl of stew or soup with lots of spaghetti in it. There was a hunk of bread on the table, and chicken bones, scraps, bread crumbs, and food on the floor. Some children's clothes and dirty towels were piled on the other vacant chair. The woman was in a dirty dress, and looked very unkempt. She was very fat, typically Polish. She looked up when we came in, and went on eating.

The fellow I was with said to her, "We wanted something to eat." She shook her head and said, "No." *He said,* "He's all right, he's a good feller." She looked dubious a few minutes and he insisted. *She said,* "All right," and went on eating. We sat down. *He said,* "What do you want, a pint?" *I said,* "I don't know, what has she? I just want a drink." *He said,* "Well, she'll have to go out and get it, she doesn't keep it here." He leaned over and said to me, "Don't pay more than a dollar a pint." I *said,* "Well, half a pint is all I want." *He said,* "Well, give her the money, she'll get it." I pulled out a dollar bill, not having any change, and handed it to him and he handed it to her. She took it, said, "All right," and went on eating. The man suddenly looked up and started arguing with her in a loud voice, apparently not knowing what he was saying or what he was doing. She scolded him, told him to keep quiet. The fellow I was with turned to me and said, "Don't pay any attention to him. He's that way." In a few minutes the drunk man went off sound asleep in his chair, after having eaten a few mouthfuls of food. . . .

3.

At the Blank Club—first Club Member came in and started talking to second Club Member.

First Club Member: "How is Mrs. Blank?"

Second Club Member: "She is fairly comfortable. She's lying in bed, and I am up there almost every afternoon before I come downtown. Have you ever met my wife?"

First Club Member: "I don't know, don't think so, might have met her, but wouldn't recognize her if I saw her."

Second Club Member: "You should come around and pay a little call on her some afternoon. She would be very grateful for it. She used to sing with Charles' wife and knew her quite well, and knew all the family, and knew your father."

First Club Member: "Well, I'll try to come and call, but I don't know whether I can or not."

Second Club Member: "How is John Blank's sister?"

First Club Member: "Very poorly. She is going slightly off mentally. Someone saw her looking out of the window the other day. I'm surprised at the way John Blank is living."

Second Club Member: "I could never understand his living there, the way he does for a man of his means. Does he still manage the A—— estate?"

First Club Member: "Yes, he does. He's managed it for about 15 years. He told me the other day that he was 78."

Second Club Member: "He's had a very unhappy life, but he's still keen on money matters. In fact, he is a little too keen."

First Club Member: "That's about the only thing he has to interest him. He still sleeps in the room where he was born, or at least they moved there three years after he was born, but they are still living in that house."

APPENDIX *B*

TABLE 8

Compound Relations in Kinship

Relation	Formula
1. Father-in-law–son-in-law	$(a, b, -c)\ (-b, c)$
2. Son-in-law–father-in-law	$(b, -c)\ (-a, -b, c)$
3. Mother-in-law–daughter-in-law	$(a, -b, c)\ (b, -c)$
4. Daughter-in-law–mother-in-law	$(-b, c)\ (-a, b, -c)$
5. Mother-in-law–son-in-law	$(a)\ (-b, c)$
6. Son-in-law–mother-in-law	$(b, -c)\ (-a)$
7. Father-in-law–daughter-in-law	$(a)\ (b, -c)$
8. Daughter-in-law–father-in-law	$(-b, c)\ (-a)$
9. Brother-in-law–sister-in-law	
a. Man's older brother's wife	$(-d)\ (b, -c)$
b. Man's younger brother's wife	$(d)\ (b, -c)$
c. Man wife's older sister	$(b, -c)\ (-d)$
d. Man's wife's younger sister	$(b, -c)\ (d)$
e. Man's older brother's wife's older sister	$(-d)\ (b, -c)\ (-d)$
f. Man's younger brother's wife's older sister	$(d)\ (b, -c)\ (-d)$
g. Man's older brother's wife's younger sister	$(-d)\ (b, -c)\ (d)$
h. Man's younger brother's wife's older sister	$(d)\ (b, -c)\ (-d)$
i. Man's wife's older brother's wife	$(b, -c)\ (-b, c, -d)\ (b, -c)$
j. Man's wife's younger brother's wife	$(b, -c)\ (-b, c, d)\ (b, -c)$
10. Sister-in-law–brother-in-law	
a. Woman's older sister's husband	$(-d)\ (-b, c)$
b. Woman's younger sister's husband	$(d)\ (-b, c)$
c. Woman's husband's older brother	$(-b, c)\ (-d)$
d. Woman's husband's younger brother	$(-b, c)\ (d)$
e. Woman's older brother's wife's older brother	$(-b, c, -d)\ (b, -c)\ (-b, c, -d)$
f. Woman's younger brother's wife's older brother	$(-b, c, d)\ (b, -c)\ (-b, c, -d)$
g. Woman's older brother's wife's younger brother	$(-b, c, -d)\ (b, -c)\ (-b, c, d)$
h. Woman's younger brother's wife's younger brother	$(-b, c, d)\ (b, -c)\ (-b, c, d)$
i. Woman's husband's older sisters husband	$(-b, c)\ (b, -c, -d)\ (-b, c)$
j. Woman's husband's younger sister's husband	$(-b, c)\ (b, -c, d)\ (-b, c)$

TABLE 8 (*continued*)

Relation	Formula
11. Brother-in-law–brother-in-law	
a. Man's wife's older brother	$(b, -c)\ (-b, c, -d)$
b. Man's wife's younger brother	$(b, -c)\ (-b, c, d)$
c. Man's older sister's husband	$(b, -c, -d)\ (-b, c)$
d. Man's younger sister's husband	$(b, -c, d)\ (-b, c)$
e. Man's wife's older sister's husband	$(b, -c)\ (-d)\ (-b, c)$
f. Man's wife's younger sister's husband	$(b, -c)\ (d)\ (-b, c)$
g. Man's older sister's husband's older brother	$(b, -c, -d)\ (-b, c)\ (-d)$
h. Man's younger sister's husband's elder brother	$(b, -c, d)\ (-b, c)\ (-d)$
i. Man's older sister's husband's younger brother	$(b, -c, -d)\ (-b, c)\ (d)$
j. Man's younger sister's husbands younger brother	$(b, -c, d)\ (-b, c)\ (d)$
12. Sister-in-law–sister-in-law	
a. Woman's husband's older sister	$(-b, c)\ (b, -c, -d)$
b. Woman's husband's younger sister	$(-b, c)\ (b, -c, d)$
c. Woman's older sister's husband's older sister	$(-d)\ (-b, c)\ (b, -c, -d)$
d. Woman's older sister's husband's younger sister	$(-d)\ (-b, c)\ (b, -c, d)$
e. Woman's younger sister's husband's older sister	$(d)\ (-b, c)\ (b, -c, -d)$
f. Woman's younger sister's husband's younger sister	$(d)\ (-b, c)\ (b, -c, d)$
g. Woman's older brother's wife	$(-b, c, -d)\ (b, -c)$
h. Woman's younger brother's wife	$(-b, c, d)\ (b, -c)$
i. Woman's older brother's wife's older sister	$(-b, c, -d)\ (b, -c)\ (-d)$
j. Woman's older brother's wife's younger sister	$(-b, c, -d)\ (b, -c)\ (d)$
k. Woman's younger brother's wife's older sister	$(-b, c, d)\ (b, -c)\ (-d)$
l. Woman's younger brother's wife's younger sister	$(-b, c, d)\ (b, -c)\ (d)$
13. Uncle-nephew	
a. Man's older brothers son	$(-d)\ (a)$
b. Man's younger brother's son	$(d)\ (a)$
c. Man's older sister's son	$(b, -c, -d)\ (a, -b, c)$
d. Man's younger sister's son	$(b, -c, d)\ (a, -b, c)$
e. Man's brother-in-law's son	Add (a) to each formula under 11.

TABLE 8 (*continued*)

Relation	Formula
f. Man's sister-in-law's son	Add (*a*, —*b*, *c*) to each formula under 9.
14. Nephew-uncle	
a. Man's father's older brother	(—*a*) (—*d*)
b. Man's father's younger brother	(—*a*) (*d*)
c. Man's wife's father's older brother	(*b*, —*c*) (—*a*, —*b*, *c*) (—*d*)
d. Man's wife's father's younger brother	(*b*, —*c*) (—*a*, —*b*, *c*) (*d*)
e. Man's mother's older brother	(—*a*, *b*, —*c*) (—*b*, *c*, —*d*)
f. Man's mother's younger brother	(—*a*, *b*, —*c*) (—*b*, *c*, *d*)
g. Man's wife's mother's older brother	(*b*, —*c*) (—*a*) (—*b*, *c*, —*d*)
h. Man's wife's mother's younger brother	(*b*, —*c*) (—*a*) (—*b*, *c*, *d*)
i. Man's mother's older sister's husband	(—*a*, *b*, —*c*) (—*d*) (—*b*, *c*)
j. Man's mother's younger sister's husband	(—*a*, *b*, —*c*) (*d*) (—*b*, *c*)
k. Man's father's older sister's husband	(—*a*) (*b*, —*c*, —*d*) (—*b*, *c*)
l. Man's father's younger sister's husband	(—*a*) (*b*, —*c*, *d*) (—*b*, *c*)
15. Uncle-niece	
a. Man's older brother's	(—*d*) (*a*, *b*, —*c*)
b. Man's younger brother's daughter	(*d*) (*a*, *b*, —*c*)
c. Man's older sister's daughter	(*b*, —*c*, —*d*) (*a*)
d. Man's younger sister's daughter	(*b*, —*c*, *d*) (*a*)

Other kinship relationships are not given in full since they consist of uniform modifications of formulas already given. The kind of modification is suggested in these examples.

Grandfather-grandson	
a. Man's son's son	(*a*) (*a*)
b. Man's daughter's son	(*a*, *b*, —*c*) (*a*, —*b*, *c*)
First cousin-first cousin	
a. Man's father's younger brother's daughter	(—*a*) (*d*) (*a*, *b*, —*c*)

All possible terms to any degree of complexity may be formed in this way, simply by following the unit relations from individual to individual.

APPENDIX *C*

Table 9 gives the relations of individuals in a shoe factory. If we regard the relations of one department to another as making up a unit system, we may proceed in the manner used in the family. We first present what may be regarded as the unit relations and then the combinations of them (see also Table 5).

We have omitted for the purposes of simplification mention of all the departments in the process line and reduced them to first process department and second process department. By comparison with the events described, the reader may see how such relations as head of supply room to bookkeeper, etc., are derived.

TABLE 9

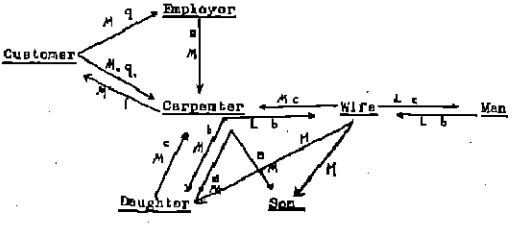
	I. *Unit Relations*	
1.	Supervisor, Dept. 1–Worker, Dept. 1	(e)
2.	Worker, Dept. 1–Supervisor, Dept. 1	$(-e)$
3.	Supervisor, Dept. 2–Worker, Dept. 2	(e)
4.	Worker, Dept. 2–Supervisor, Dept. 2	$(-e)$
5.	Supervisor, Dept. 1–Supervisor, Dept. 2	$(-f, g)$
6.	Supervisor, Dept. 2–Supervisor, Dept. 1	$(f, -g)$
7.	Supervisor, Dept. 1–Worker, Dept. 2	$(e, -f, g)$
8.	Worker, Dept. 2–Supervisor, Dept. 1	$(-e, f, -g)$
9.	Supervisor, Dept. 2–Worker, Dept. 1	$(e, f, -g)$
10.	Worker, Dept. 1–Supervisor, Dept. 2	$(e, -f, g)$
11.	Worker, Dept. 1–Worker, Dept. 2	$(-f, g)$
12.	Worker, Dept. 2–Worker, Dept. 1	$(f, -g)$
	II. *Unit Relations Among Three People*	
1.	Supervisor–Worker (1)	$(e, -g)$
2.	Worker (1)–Supervisor	$(-e, g)$
3.	Supervisor–Worker (2)	$(e, -f)$
4.	Worker (2)–Supervisor	$(-e, f)$
5.	Worker (1)–Worker (2)	$(-f, g)$
6.	Worker (2)–Worker (1)	$(f, -g)$
	III. *Compound Relations*	
1.	Foreman (1)–Foreman (2) (compound through works Supt.)	$(e, -g)\ (-e, f)$
2.	Foreman (2)–Foreman (1)	$(-e, g)\ (e, -f)$
3.	Head Bookkeeper–Worker	$(f, -g)\ (e, -g)$ (e) or last term $(e, -g)$
4.	Worker-Head Bookkeeper	$(-f, g)\ (-e, g)\ (-e)$

(It is unnecessary to give all instances of such combinations in the factory. Any others desired may be obtained by tracing relations from individual to individual and combining in the way illustrated above.)

APPENDIX *D*

Community Welfare Head: "Yes, he's a strange case. He used to be one of the finest carpenters in the city, but he began slipping, and he finally got so that he worked so slowly that people complained about him, and asked his employer to send someone else who would work faster. The man kept him on for a while even after he had begun to lose ground because he didn't like to see him go; but when he began to get so many complaints about him, he finally had to let him go. He *couldn't afford to keep a man like that on his payroll. Since* then he has never had any really steady work. He gets odd jobs now and then and works for the city sometimes; but most of the time he's been living on the city. It's really a pathetic sort of case because he used to be such a good workman. He's grown very antagonistic toward almost everybody now."

First Stage



Second Stage

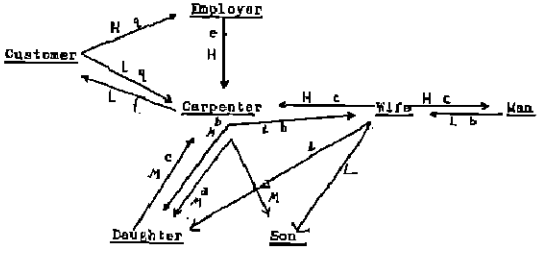
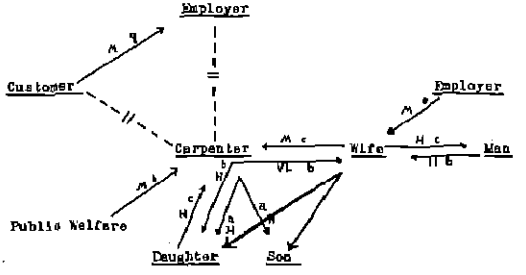


FIGURE 5

Interviewer: "Did all this happen before his wife left him?"

Community Welfare Head: "Oh, yes, it started quite a while before that. She was a pretty poor type though, and I guess she had a good deal to do with this. I've always felt sorry for him. I can remember going to the house and hearing her carrying on fit to kill. She had a high voice anyhow and when she got excited, which was very often, it went higher and shriller than ever. He would take it all very quietly and of course that would make her even worse. She was a terribly hysterical sort of person and would berate him about everything. All the time she was carrying on with other men. There was one in particular, the one she finally ran away with. When her husband began slipping, she began going out and getting jobs of one kind or another. Gradually, it got so that he was staying at home with the children and doing all the cooking and housework while she was out working or gallivanting around with this man. Finally I got her a job in Saranac

Third Stage



Fourth Stage

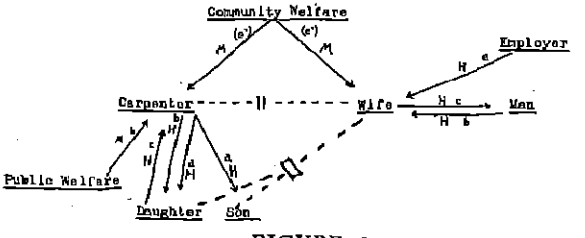
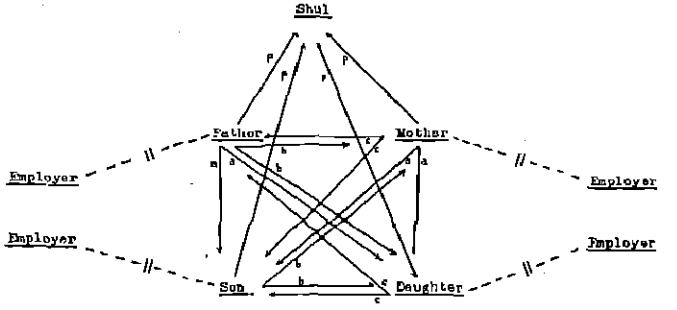


FIGURE 6

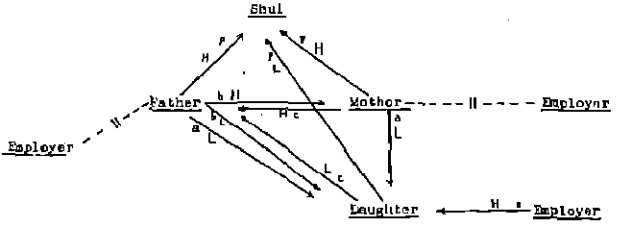
thinking that it would keep her away from the man and save the family. However, it wasn't more than two weeks after she had gone that I heard that this man had followed her up there. What could I do? I had done as much as I could by sending her away from here, and if they insisted upon running away together, I couldn't keep them from doing it. The husband at the time made out that I had sent his wife away so that she could run away with the other man, but that's ridiculous. Since then he has been taking the full care of the children and the house. He seems to do a pretty good job taking everything into consideration."

Mr. Blank: "Look at the Shabas [the Sabbath]. In America it is lifeless and artificial. In *der Heim* [the home] it was beautiful. On Saturday everybody stopped work. When the family sat down to the table on Friday night, even the poorest became rich. The Shabas came like a great renowned guest.



(All frequencies have H value)

Shabbs In America



"SHABAS IN DER HEIM"
FIGURE 7

Everybody was excited, it was a real holiday. The candles shone and were blest, and the meal was the best of the week. Even the poor families that had only milchichs [milk foods] during the week always had meat on Friday. After the meal the father and the rest of the family would sit around the table and sing songs and tell stories. Everything was so happy and beautiful and the next day on Saturday everybody went to Shul. Saturday was no different than Yom Kippur [the day of atonement]. Everybody came and in their best clothes, and everybody prayed with their whole hearts. The Shul was always packed. After Shul we used to take a walk and come back for dinner and after dinner we lay down for a sleep until supper time, and when it was dark and the Shabas was over it was a little gloomy, just as if the guest had left. Things were not so shiny and lovely any more. They were dull and every-dayish and one could hardly wait until the next Shabas. You counted your days by it.

"But here in America what does the Shabas mean? Nothing, worse than nothing. There are four kinds of Jews, those who go to the Shul every day, those who go only on Shabas, those who come only on Yom Kippur and those who don't come at all. About ten to twelve come every day now, about twenty come on Saturday, and on Yom Kippur almost everybody comes, but on Shabas people are busy, they work, they have businesses and they can't come. In Europe the Jew wouldn't open his business on Saturday if he knew he could make a million dollars. The Goyim knew that the Shabas was holy to the Jews, but here nothing, and the Jews keep businesses open, they can't help it, so what's left of the Shabas? Yet you have to work. Take even our own family, my wife and I both hold the Shabas. We don't work, we don't ride, we don't talk on the phone, and we hold it as it should be. All right but the girls have to work so already there are in the family two strings pulling against each other, and if they work they also do other things they shouldn't do, and already is the Shabas broken in this house. It is not a living real thing but is a dead corpse. It is missing the fire, the beauty, the sincerity; the meaning is gone. Ah, things were different in der Heim."

APPENDIX *E*

For certain purposes, it is necessary to know what elements represent the results of relative products. For here many of the terms represent the initial unit relations of which the matrix was formed. The matrix presented shows this duplication. It should be noted

1	1	12	7				0	0	0	0	0	0
2	4	1	6				0	0	0	0	0	0
3	6	10	1				0	0	0	0	0	0
4				1	2	8	0	0	0	0	0	0
5				8	1	11	0	0	0	0	0	0
6				10	3	1	0	0	0	0	0	0
7	0	0	0	0	0	0	1	12			1	
8	0	0	0	0	0	0	4	1	2			
9	0	0	0	0	0	0			1	11		5
10	0	0	0	0	0	0			3	1		6
11	0	0	0	0	0	0	5	9			1	
12	0	0	0	0	0	0			1	7		1

FIGURE 8

that the resultants of the terms in the leading diagonals are zeros. These terms are called identities to differentiate them from those elements represented as zeros, which are non-existent relations. The numbers in the matrix refer to the number of the term in the first sequence.

The Journal of Psychology

EDITED BY

Carl Murchison

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MAY, 1940

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AGGRESSIVE BEHAVIOR IN YOUNG CHILDREN AND CHILDREN'S ATTITUDES TOWARD AGGRESSION 151

By Mary Delafield Fite

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AGGRESSIVE BEHAVIOR IN YOUNG CHILDREN AND CHILDREN'S ATTITUDES TOWARD AGGRESSION* †

MARY DELAFIELD FITE

Department of Psychology, Columbia University

Acknowledgment 153

I. Introduction 155

II. Attitudes toward aggression and degree of aggressive behavior 173

III. Influence of parental and group attitudes on the child's attitudes toward aggressive behavior 199

IV. Aggressive behavior and attitudes in relation to the child's place in the group 217

V. The child's personality and his attitudes toward aggression 271

VI. The rôle of the teacher in the formation of attitudes toward aggressive behavior 293

VII. Summary and interpretation 305

References 319

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957 Madison Avenue
New York City

MARY DELAFIELD FITE

I. INTRODUCTION

Impulses to aggression, whether motivated by hate or love, by anger or fear, by a desire for possession or a desire for power, by whatever feeling or circumstance, are a source of anxiety and conflict to every human being. No one knows how to deal with them nor how they should be dealt with. No one is happy with them and no one can exist without them. Ideals of peace and charity vie with the need for self-protection. Parents the world over are *trying to teach Johnnie never to hit his little brother but to give* his big brother a good hard smack for every one he receives. Nursery school teachers are forced to isolate Susie for hitting her best friend without apparent provocation but to encourage measure for measure if Susie's best friend hits first. Boys may hit boys with much greater impunity than they may hit girls. Girls may hit anyone but soon run the danger of being considered "un-feminine" if they do so. Boys are classed as "sissies" if they do not maintain a certain average, though they may be classed as "bullies" if they do. A mass of *confused rules has grown out of this conflict of feeling about one's* aggressive impulses. And every child has to find his way somehow to a set of rules and attitudes by which he may abide without being "snowed under."

This study grew out of an interest in the attitudes of young children toward physically aggressive behavior: how such attitudes develop and change in the course of nursery school and kindergarten *experience* and what concomitant changes in emotional development take place. It is primarily concerned with the influence of experience in nursery school and kindergarten on such attitudes and is largely limited to a discussion of attitudes toward one type of physical aggression: children hitting one another. Other topics related to children's aggression (e.g., degree of aggression, other forms of aggression, motives for aggressive acts, aggression in other environments, influences from other areas of the child's environment, etc.) are brought in only as they show more clearly how the child feels *about physical aggression toward his school companions and why* he feels that way. In other words, it is a study of the child's attitudes toward physical aggression as they are seen to develop in and through his social life in nursery school and kindergarten.

Before presenting any further delineation of the problem in this study, it is necessary to tell something of the background against

independence increasingly complex forms of social life between children are able to develop. The child develops not only as an individual but as a member of a group, and, with group backing, shows forms of aggression and hostility—as well as loyalty and affection—which might not otherwise have appeared. This development as a member of a group is the fundamental pattern of the present study.

Studies dealing primarily with overt manifestations of aggression between children in the nursery school or kindergarten have stressed other important factors in the development of the child's aggression. They have shown, for example, that the degree of physical aggression shown by the children in any group depends in part upon the make-up and setting of the group. Attempts to correlate degree of aggressiveness with other factors, such as age, *IQ*, etc., have yielded no consistent or reliable findings just for this reason. For instance, some writers have found that, within the 2-6 age range, younger children are more openly aggressive than older. Others have found an increase in overt aggression with age. Still others have found no consistent relation between age and degree of aggression but have pointed out other more marked influences on the group which have overweighed the age factor. Jersild and Markey (9), finding more aggressiveness among day-nursery than nursery school children, noted the importance of the socio-economic background from which the children came. The kind and amount of teacher supervision was also found to be important, as well as the amount of play space and play facilities. The make-up of the group, in terms of number of boys or girls or number of children of different ages, were found by Dawe and Green (3, 5) as well as by Jersild and Markey (9) to influence the amount of quarrelsomeness shown.

Even allowing, however, for the influence of group setting and make-up, consistent findings were hard to obtain. For within the larger group were smaller constellations which in their turn affected the degree of aggressiveness. Friendships, for example, provided opportunities for quarrels and (according to Green) "mutual friends are more quarrelsome and mutual quarrelers are more friendly than the average" (5). Green obtained a correlation of +.30 between friendship and quarrelsomeness. And since these friendships were sometimes of long standing and dating back to previous years in nursery school, aggressiveness in general, as shown by Jersild and

Fite (8), might be conditioned by the experience built up in these long-term relationships.

Finally, observers of children's aggressiveness in a nursery school or kindergarten setting have come to stress the importance of individual personality patterns, individual experience, and the circumstances making up the social status of each child in the group. Murphy (13), for example, points out the importance of "outgoingness" in general as a factor in aggressiveness. She found a correlation of +.44 between outgoing aggressive behavior and outgoing sympathetic behavior. She also points to the degree of the child's security in any situation as affecting the kind of behavior shown in response to it. This, of necessity, requires a consideration of all the factors making up that situation, both in terms of the immediate setting and in terms of what the child brings to it. Experience in the home and in nursery school have both been shown by Murphy, Hattwick, and others to have a bearing on what the response will be. This is naturally a fundamental factor stressed by Isaacs, whose main emphasis is on the motives and background for aggression.

2. *Studies Dealing with Children's Aggressiveness in Situations Other Than the Nursery School*

The aggressiveness of young children as manifested in situations other than the nursery school cannot be covered here. It has received wide attention, especially in psychiatric areas. The work of Anna Freud (4), Melanie Klein (10), David Levy (11), Bender and Schilder (1), etc., has provided new insight into the fundamental bases for aggression. This work is concerned largely with the primary areas of the child's aggression, hostility toward parents and siblings; as against the secondary area, hostilities toward friends, with which this study deals. No attempt is made in the present study to deal with these primary roots of aggression, but only to carry further the developments which take place in aggressiveness as part of social relationships in the preschool period.

3. *Studies Dealing with Children's Attitudes toward Aggression*

Turning now to the question of children's attitudes toward aggression, one finds that there has been little research on the attitudes of children of preschool age. Much is implicit in the work of the psychoanalytic school in their discussions of the development of the superego or, more broadly, conscience and morality. Isaacs (7)

discusses the development of feelings of guilt in relation to one's behavior toward other children, and believes that these guilt feelings are much less dependent on parental teachings and adult prestige than other writers have felt. "The superego," she says, "develops within the child's mind through this imaginative incorporation of the parents," but she also says:

> The question as to whether or not these fears of punishment and the sense of guilt develop spontaneously in the child's mind, or are entirely due to teaching and adult prestige, is one which we have been able to appraise and understand through the light which psycho-analysis has thrown on the early stages of development. . . . It has become definitely established . . . that the sense of guilt, or, more strictly, the deeper anxieties that represent the primitive forerunners of the sense of guilt, *do* develop spontaneously in the child's mind, whatever be the precise nature of his educational experiences.

She concludes: "The pressures we exert externally can increase the severity of repression . . . but we cannot enact that no repression shall occur, nor can we determine, as educators, its amount and internal distribution." Her statement that children's criticisms of the behavior of other children is generally a projection of their own guilt and what they feel to be their own faults is a significant one. "This projected guilt," she states, "is one of the biggest factors in the children's active hostility to each other."

Bridges (2) feels that a desire for approval is an important factor in the development of a child's attitude toward his own behavior.

> They develop a love of power and set high standards or ambitions for their own achievement. Some children, when they fail to achieve the standards they emulate, when they are afraid of losing adult approval or meeting disapproval, become depressed or annoyed. . . . If adults are too harsh in their discipline when a child is already depressed and miserable over his own failure, the little one may develop an emotional attitude of shame towards his conduct.

Bridges believes also that his experience in watching other children is one method of learning to distinguish between right and wrong. "A child first learns what to do and what not to do himself, and as he begins to take more notice of the behavior of other children he also learns to recognize their good and bad behavior."

Bender and Schilder (1), who worked with children aged 3-15, placed for treatment in the psychiatric division of a hospital because of behavior disorders, were interested also in the development of ideas of right and wrong, especially as these ideas pertained to the children's own aggression. They questioned the children about their attitudes and also set up a play situation which the children could use to express their feelings about aggression.

> Good and bad are merely actions which the adult, with executive power, likes or dislikes. The child decides to be good in order not to be exposed to any deprivation.

The child's morality is, however, changeable. "Guided by immediate impressions, they change their moral orientation often." This gradually develops into "a socially accepted concept in which the attitude of the surroundings is of paramount importance."

Anna Freud notes that "the child has a two-fold morality, one for the world of adults and another for itself and its companions of the same age." This is seen often in the nursery school, where the activity of a group of children may change quite radically when a teacher comes within earshot.

Piaget's work on the *Moral Judgment of the Child* (14) deals most fully with the intellectual side of the development of the child's morality during his early years. His work places a great deal of emphasis on the place of the parents in the development of the child under six. What the parents say is good, is good, and any act showing obedience to adult rule is good, regardless of circumstances. Judgments are made entirely on the basis of external fact and it is the letter rather than the spirit of the law that is to be observed. Later, through experience with others of one's age, this strict adherence to parental law is relaxed. The letter of the law now gives way to the motives behind the act, and there is a gradual recognition of the fact that the simple "good-bad" duality is not always realistic. This development of children's morality was found to be much accelerated in a group of higher socio-economic status. One must note, too, that the purely intellectual aspect of such attitudes, especially with children under six, may change very radically with changes in the emotional content of the child's relationships to the various elements of his environment.

The above mentioned material covers only a small part of the

work which has been done in the various fields relating to the present study. It may serve, however, to present a rapid survey of the background for the material to be presented here. Our problem requires an intensive study of the relation of behavior to attitude as a specific issue, and with respect to method has relatively little in common with the studies reviewed.

B. Subjects

As already described, the basis for the choice of subjects lay in the fact that they had been included in the previous investigations mentioned. In the spring of 1935, when this study was begun, there were seven children in the three-year-old group of the nursery school at the Child Development Institute, Teachers College, Columbia University who fell in this category. One of these was immediately eliminated because of illness and a prolonged absence at that time. Of the remaining six, three were carried through the entire period of study (spring, 1935, to spring, 1936); two were carried through the fall of 1935 (material on only one of these was adequate for full analysis) and one was seen only in the spring of 1935. The three who were carried through the entire period of study were also those who had been known to the investigator for the longest period: two of them entered nursery school in the fall of 1932, one early in 1933. The other three had been under the investigator's observation since the fall of 1933. On four of these children—Nancy, Lila, Evan, Holden—complete records were obtained. These four are discussed at length. Records on the other two children—Joyce and Denison—are used only in discussion of the experimental situation.

On January 1, 1935, when the first observations were made for this study, these children's ages, *MA*'s and *IQ*'s were as given in Table 1.[2]

In the spring of 1935 these six children were members of a group of about 20 three-year-olds. They shared a large playground with a group of four-year-olds, some of whom they had known before in previous groups. On the whole, the three- and four-year-olds did not play together. There was naturally some mingling, but each

[2] *MA*'s and *IQ*'s were based on results from administration of *Minnesota Preschool Test* in the spring of 1935. This test was given by the staff psychologist as a part of the routine.

TABLE 1

	CA	*MA*	*IQ*	Entered *nursery* school
Nancy	3 yrs., 9 mos.	5 yrs., 1 mo.	135	Fall, 1932
Lila	3 yrs., 6 mos.	4 yrs., 10 mos.	132	Spring, 1933
Evan	3 yrs., 9 mos.	4 yrs., 4 mos.	115	Fall, 1932
Holden	3 yrs., 2 mos.	4 yrs., 0 mos.	125	Fall, 1933
Joyce	3 yrs., 1 mo.	3 yrs., 11 mos.	126	Fall, 1933
Denison	3 yrs., 3 mos.	3 yrs., 3 mos.	100	Fall, 1933

child tended to make his friends in his own group. Nancy, Lila, and Evan had all been together in school for two or more years. Bernard, also a member of the group, had been with them in the same group. Holden, Joyce, and Denison had been together for one and one-half years. All the other children were new in the school. In the fall of 1935 the constitution of the group changed. Joyce was kept back in the three-year group, Denison had left school, and the other four subjects (together with Bernard) were the only "old guard" left in this group—though there were a number who had been with them in 1934-35. As four-year-olds they now shared the playground with five-year-olds. There were two regular teachers and occasional student assistants for each group.

C. Methods of Obtaining Material

1. The background material included all records on these children obtained for previous studies as indicated above; it is also included all teachers' records, psychologists' reports, etc. In addition to these records informal interviews were held with one of the parents of each child early in the fall of 1935. Interviews were also held with the head teacher of each group.

2. The direct observation material was obtained from two sources: (*a*) observation of the children in the nursery school, and (*b*) an experimental situation.

a. Observation of the children in the nursery school. The observations were spread over a period of one and one-quarter years, varying in amount for the individual children because of absences, illnesses, and withdrawals from school. These observations were running diary records in which the observer attempted to record as much as possible of an individual child's behavior toward other

children together with the behavior of those in immediate contact with him. All records were taken by the writer, who had had previous experience totalling over 300 hours in taking this kind of record. In the spring of 1935 the records on individual children were spread over periods varying from four to nine weeks, and single records varying in length from five to 30 minutes. Each record was timed in half-minute intervals by the use of a stop-watch. By the fall of 1935 the procedure in record-taking had been standardized so that each child was followed for an hour (two half-hour periods) on each of five consecutive days at that time and again in the spring of 1936.

Length of times of observation periods were worked out on the following basis: The six-monthly interval was chosen as a basis for obtaining a dramatic picture of changes in the child's behavior over this particular period. Up to the time these observations were begun the investigator had seen these children almost constantly during the winter months. The idea now was to withdraw from the scene and return for periods of check-up and study of behavior trends at the later periods, thus gaining a clearer picture of changes in behavior than could be obtained by remaining more or less constantly on the scene. The five-day observation time at each of the periods was chosen on the basis of experimentation. In the spring of 1935 records on each child were scattered over a longer period and each record was briefer. Giving the same amount of time to each child in a more concentrated period gave a much better cross-section of the child's behavior in that period. He could be followed from the beginning of the morning till rest time with only a short break, every move watched during those hours, with an opportunity for the observer to see for herself not only his initial reactions to what was going on, but his reactions a half-hour, an hour, or even a day later. When observations were more scattered there was less opportunity to know what he was "aiming at," what he was talking about when he pursued one point over a fairly long time. It did not appear that more than five days were necessary for gaining a good understanding of what was going on, considering the fact that the observer knew the children extremely well already.

Any suspicion that the child's behavior at a given time was being unduly affected by some unusual circumstance (e.g., a recent illness) caused the records to be postponed until he seemed to be

carrying on again at his regular pace. All of the records were started shortly after 9 A.M. and continued for the stated period regardless of what activity the child might be engaged in. By far the greater part of the material was obtained during the free play periods on the playground, roof, or in the gymnasium, and only the free play records have been used in quantitative treatment. The aim was to secure a total of 12-15 hours of formal observation records on each child. In three cases this was done. In the other three cases records were used for quantitative treatment only where enough material had been obtained to give what seemed an adequate picture of the child's behavior. Aside from those observations, there was much informal observation of the six children, recorded at the end of the morning in brief summaries of the day's activity and of the behavior trends the child was showing.

b. An experimental situation was devised for the purpose of getting some idea of the verbal attitudes of these children toward the question of hitting. Studies of the social behavior of children in nursery school have shown that even the youngest of the children respond strongly to acts of aggression against themselves and that certain words are soon attached to such behavior. "Bad," "good," "naughty," "nice," are words frequently heard in the vocabulary of a three-year-old. Shades of differentiation in degree of badness or goodness as applied to certain acts rapidly creep in. To the dicta of grown-ups, children soon apply their own interpretation, and in their own social world build up a morality suitable to their struggle for existence in a competitive environment. This does not necessarily imply a conscious morality. Our hypothesis was that there were probably two moralities for each child: one developed out of the attitudes of grown-ups in his environment, the other a product of his experience in getting along with other children. They might come to the same thing, they might not. But since children would be more likely to have heard verbalizations on the rights or wrongs of hitting more frequently from adults than from other children, and since in the experimental situation the child would be dealing with an adult, it seemed most likely that any verbal responses received would tend to give a one-sided picture. For this reason it seemed necessary to devise a situation which would help in some way to bring out the other side, too. This situation, as finally worked out, is presented in some detail since the interpretation of responses is so dependent on its character.

In the spring of 1935, a set of 12 pictures was presented to each of the six children, two series of six pictures each with only one series presented at a sitting. Each picture represented two children in some social situation of frequent occurrence on the playground. Some of them dealt with aggression; e.g., one child whacking another over the head with a shovel, or snatching a toy away. In one series there was a boy and a girl in each picture; in the other series, two boys. The experimenter merely showed the picture to the child, then asked him to tell about the picture. There were no set cues for questioning the child, though in each case he was encouraged to give a judgment on the behavior involved. An assisting research worker recorded his responses and general behavior.

In the fall of 1935 this situation was revised and given a new setting. Those children who were inclined to verbalize easily received sufficient stimulus from the pictures to set them off on a wide train of moralization. Those who did not verbalize easily needed some other means of expression. On this basis, blocks and dolls were substituted for the pictures, and the child helped the experimenter build up the experimental situation. (The dolls used were 7-inch boy and girl dolls. In the fall of 1935 one boy doll and one girl doll were used. In the spring of 1936, the situation was repeated just as in the fall, but at the end one more doll of each sex was added.) The procedure was as follows: The experimenter, presenting first only the blocks, suggested to the child that they make a playground with the blocks, building see-saws, slides, sandboxes, etc., to make it look as nearly as possible like the one from which the child had just come. The experimenter helped the child build, followed his suggestions, and in every way used this building time as a means of making friends and helping the child to feel at ease. The dolls were then produced, with the words: "*And here are some children to play on the playground. This one* (handing to the child the doll of his own sex) *is named*—(the name of the subject)." The experimenter kept the other doll, began playing with it on the "playground," said, "*What's—going to do?*" After a few moments of play with the dolls, the experimenter ran through the following routine (adjusted, of course, to the child's responses):

> Shall I make—(experimenter's doll) hit—(subject's doll)?
>
> What do you think about hitting?—Is it all right to hit other children?

Why not? (or why)?
Who said so?
What do *you* think?
What if some other child hits you first, then what's the thing to do?
Now you make—(subject's doll) hit—(experimenter's doll).
What do you think about hitting?—Is it all right?

Before this block-and-doll situation was presented to any of the subjects of this study (in the fall of 1935 only five because of one withdrawal) it was considered necessary to try it out with other children of similar age.[3] Responses to it were obtained from 19 other children, all between three and four and one-half years of age. Responses of these 19 children were used merely as a guide in the interpretation of responses of the five main subjects. This was important, since in a situation of this kind there would inevitably be certain factors influencing the children's responses which could not be controlled.

The first, and one of the most important, of these situational factors was found to be that of the relationship between the child and the experimenter. The fact that the experimenter was an adult would probably influence the child to give an answer in line with what he had heard adults say. If parents and teachers had stressed hitting as an undesirable form of behavior, the child would then most likely say that hitting was "bad," regardless of what thoughts or feelings he might have on the subject himself. His desire for approval from adults might at the moment dominate any interest in imparting his own thoughts on the subject. Probably a very accurate picture of this influence was that given by one child:

"Is it all right to hit other children?"—"uh-uh" (no).
"Why not?"—"Cause it's not nice."
"Who said so?"—"My mother said so."
"What do *you* think?"—"I don't think anything."

A second factor affecting responses was initial rapport between

[3]In the fall of 1935 and again in the spring of 1936 this situation was presented to each of the subjects on the day before his week's observations for that period were begun.

experimenter and child. Within this particular group of 19 children there were none who knew the experimenter well, few who had ever spoken with or had any direct contact with her. Most of them had seen her on the playground taking records, but for varying lengths of time and with different reactions to being observed. Here could be noticed the difference between the child who entered happily into the situation, was quite ready to talk at length on any subject and whose responses were given without fear or question—and on the other hand, the child who from the beginning appeared ill at ease and hesitant in all responses. Furthermore, regardless of the child's initial attitude toward the experimenter, there was the matter of the degree of rapport the experimenter was able to establish when the situation was fairly started. Some children showed an immediate interest in the building, which was unquestionably an aid in the establishment of rapport, and seemed relaxed and natural in their manner of answering questions. On the other hand, one child who had not been in school long and who had seen very little of the experimenter at any time, did not want to take off his wraps, was very ill at ease generally, and hedged all questions. When asked, *"Is it all right to hit other children?"* he obviously hesitated, then talked rapidly about his ponies in the country. On repetition of the question he said hesitantly, *"Just gently,"* then again rapidly changed the topic of conversation. To the end he used the same techniques of changing the subject or immediately becoming very busy with the blocks when asked a question. There is little doubt that the hesitant *"Just gently"* might have been something quite different had he been feeling more secure in his relationship to the experimenter.

A third factor that seemed to affect the child's response was the degree of the child's interest in the different parts of this particular situation. Sometimes the child was so much interested in playing with the blocks that his answers to the questions were perfunctory at best; for example: "Is it all right to hit other children?"—*"No. I'm going to build a swimming pool."* In many cases, however, the interest in the play situation seemed to serve its intended purpose of making the topic of conversation more realistic and therefore bringing better attention and interest to the questions. These children seemed better able to understand what the questions were about, making remarks immediately out of their playground experience,

such as, *"Sometimes we do it on the playground,"* or *"Holden hit me and hurted me and I fighted,"* or *"No hitting on the playground. We do too much work for hitting."*

Of greater interest is the extent to which the children tended to identify themselves with the dolls (it will be remembered that one doll was given the child's own name). There is no doubt that every child was delighted at having his name given the doll, and that this, as shown by their remarks, revealed at the start a certain amount of identification. Several children said, *"Me? This* (doll) *is me."* One said, *"He has blue eyes like me." "I'm* (meaning the doll) *going to play on the rocking-horse."* All smiled and seemed pleased when told the doll's name. In their actions with the dolls, however, there seemed to be varying degrees of true identification. Some were hesitant about making their doll hit the other doll at all, behaving very much as if they themselves had been asked to hit another child; after hitting the other doll, they sometimes looked at the experimenter a little embarrassedly. Others showed an excess of zeal in making the doll hit, as if working off some of their own feelings. Dick, who on the playground was rather quiet and shy and seldom aggressive in any way with other children, apparently worked off a good deal of feeling. He knocked the second doll down with his own, picked it up and knocked it down again several times, then held it in his hand and hit it repeatedly with his own doll. He hesitated and stopped, but continued when reassured by the experimenter that he could continue as long as he liked. After more of hitting the dolls together the experimenter handed him a pencil, then a large block and asked Dick if he would like to hit the doll with those. After hitting the doll several times with the block, Dick said, *"OK,"* and stopped. This tendency to identify strongly with the doll was shown in several other cases, but by no means in all. There were several children who distinguished so clearly between dolls and children that apparently there was no identification taking place. One child said, for example, *"We'd better not hit them because the paint might come off."*

A fourth important factor was the moment at which the question was asked. One child, for example, said that hitting was not nice, but when the question was repeated just at the moment that he was making his doll hit the other, he said, *"Yeah, it's all right."* Another child said first, *"Yes, it's all right."* Her second response was, *"I*

don't know"; third, *"Well, I guess it's better not. My father says so and I think that's better, too."* (Note how this question was asked on three different occasions during the conversation—and just for this reason.)

Even such relatively simple items as the experimenter's facial expression or tone of voice when asking the questions, and conscious or unconscious reactions to the children's responses probably influenced the replies. And even more important is the fact that it is the experimenter who suggests the doll-hitting at the beginning. This may give sanction to a kind of behavior which, if not suggested by the adult, would not be tried out.

This experimental situation was naturally used as only one method of studying the children's attitudes toward aggression. It was aimed especially at obtaining those attitudes which the child would express in the presence of an adult and outside of an immediate social situation involving other children. Attitudes expressed verbally in a social situation and attitudes implicit in the child's social behavior were obtained by means of the observation records.

D. Summary of Procedure

This study deals with a phase of the relation between moral attitude and moral conduct in small children. Specifically we undertook to ascertain how nursery school children feel about physical aggression and how their expressed feelings are related to their own aggressive habits.

Starting from observational work continued over a two-year period, we developed an experimental procedure in which the child was encouraged to make dolls hit one another, a name being given to each doll to make it represent a child in the nursery-school group. We noted both verbal and non-verbal response to this incentive. We found that the response to this situation depended on a wide variety of personal and situational factors, but that it constituted a clue to the children's attitude toward aggression. The plan of our study is to interpret as closely as possible the observational and experimental material as it relates to each child.

In Chapter II we shall compare the experimental data with actual aggressive behavior in free play. In Chapter III we shall compare these two groups of data with parental attitudes as expressed in interviews. Chapter IV will trace the relation of the child's aggres-

sive behavior and attitudes toward aggression to his rôle in the nursery-school group. Chapter V will consider the part played in his responses by his relatively constant and deep-seated traits of personality, and their mode of functioning in conflicting situations. In Chapter VI we shall try to see the ways in which the children understood and used teachers' precepts regarding aggression. In the final chapter we shall try to find the meaning of these various materials for the nursery school child's understanding of the moral code as it relates to aggression.

II. ATTITUDES TOWARD AGGRESSION AND DEGREE OF AGGRESSIVE BEHAVIOR

As a starting point for our attempt to discover what aggression means to young children we shall present a review of the children's responses in the experimental situations. In this review we shall frequently use the word "attitude" to describe how the child felt about the problems of hitting that were presented to him. As the discussion will show in more detail, we had a variety of evidence; what the child said in response to questions is the most tangible evidence but no more important than his facial expression, bodily tension, and other cues to anxiety or satisfaction associated with the idea of aggression. Both what the child said, and how he seemed to feel are included in our use of the term "attitude," though at every point an attempt will be made to indicate to the reader what the bases for the conclusions regarding each child's attitude actually were. After our initial presentation of the "attitudes" derived in this way from observations during experimental situations, we shall analyze the children's actual aggressive behavior at play with other children on the playground. The comparison of data from these two sources will provide the basis for our final hypotheses in this chapter regarding the child's real feelings about aggression.

A. Attitudes Toward Aggression Appearing in the Experimental Situations

The experimental situation was presented to each child at approximately six-month intervals: in the spring of 1935, again in the fall of 1935, and finally in the spring of 1936. All six children were seen at the first period, only five at the second, and three at the last. It will also be remembered that in the spring of 1935 pictures were used as the basis for discussion, while by the following fall the block-doll play situation had been developed.

In order to facilitate keeping the children in mind as individuals, we shall discuss them in approximately the same order throughout the next three chapters. Nancy, the oldest, and her friend Lila will generally be seen in detail first; next, Evan, the third of these older children; the younger children Holden, Denison, and Joyce will often be grouped together for contrast.

1. *Nancy*

It was not surprising to find one of the oldest and brightest of the subjects being most fluent in her opinions during the first experimental period in the spring of 1935; rather, what was surprising about her responses was the deeply moral tone coming from a child not yet four years old. Nancy implied in every way that attacking a child for any reason was "not nice." When asked what she would do if another child hit her, she would tell the teacher, she said. Would she hit him back? "No, because I want to be good because my mother and father say I should, so I'm trying my best." And later she generalizes this still further:

> You have to tell the parents. You must tell everything to the parents 'cause they're bigger. The child asks the parents what to do and then they help the child.

Whether or not this child was able to live up to these very high standards is considered later. Whether or not for the benefit of the experimenter she was merely giving pious lip-service to what she had heard is also a question taken up later; suffice it to say here that in a repetition of the situation two weeks later with the second series of pictures, her strongly filial attitudes held up pretty well. No, she would not hit back, and if her aggressor kept at her, she would call her mother to make him stop. "Mother would say, 'This boy hurts' and 'cause it's not nice and would she please take his hand off 'cause it's not nice." The experimenter tried to make it harder: "But suppose you were at school, and you called the teacher, and the teacher didn't hear you?" Nancy admitted in that case that she'd have to "push his hand off." Then for a moment her feelings slipped through: "Then I would show him how it feels." But as if in contrition over that admission, she replied to the next question, *"Would you hit him?"* with "I would be nice and good. I would give him a lolly-pop."

Certainly it looks, at least, as if Nancy were trying to give the "right answers." Was there any more to it than that? Seven months later (October, 1935), in the same play situation, her responses seemed to go just as strongly in the same direction as before. Here she was much more "in" the situation—in fact, gave every appearance of a strong identification with the doll. At the beginning when the experimenter asked if she should make her own

doll hit Nancy's, Nancy responded, *"Yes,"* rather casually. But at the actual hitting, her face grew serious, and at the suggestion that she make her doll hit the experimenter's, she drew her doll *back* from the experimenter's and, with a very anxious expression, said, *"No, I don't want to."* She seemed quite near the point of tears, and to each question about hitting replied vehemently that hitting was *not* all right: "I know because my father and mother say so. I *know* it." There is just as vigorous denial even on the question of retaliative hitting. Here there appears to be less reason for doubt as to whether she spoke with real conviction. And yet the very intensity of the conviction tends to belie a complete self-assuredness. In general, self-assuredness and anxiety do not go together, and there was no doubt here of the presence of anxiety. Both the experimenter and the assisting research worker were struck by the unhappiness of her tone and expression, and the vehemence with which she pulled her doll back when asked to make it hit.

In April of 1936 the situation was repeated. She said as before that she did not think it right to hit other children, *" 'Cause it hurts. 'Cause I felt it one time."* (Note that "it hurts" seems to be the first true "reason" to develop.) *"I think it's not so good—neither does my mother."* There is nothing so far very different from what she had said before, and again one has to fall back on more "subjective" elements. Against the utter seriousness with which everything was said in the first session 13 months earlier, and against the intensity and emotionality of her responses six months earlier, may be put in this session the complete air of casualness with which replies were given. She seemed to be saying, *"Yes, this is what I really think but it's not all so important to me now."* This change of manner is borne out in the changed response to one question. Remember that in both of the previous sessions she had maintained vigorously that hitting was not right under *any* circumstances. This time, when asked, *"If some other child hits you first, then what's the thing to do?"* Nancy's immediate response is, *"Hit them back."* Moreover, she's not above romancing a little to back this up: *" 'Cause that's what my mother tells me every night before I go to bed."* The pure fiction of this statement was discovered when the parents were interviewed. Also note another reason: *" 'Cause that's what sometimes other children do to me."* Now it seems that in phantasy she has loaded her parents on her side and in actuality she has her social experience to back her up, and thus perfect accord is made.

2. *Lila*

After Nancy had been in nursery school a year, another little girl entered her group, a child similar in age and in mental and verbal ability. Toward the end of their first year together they began to play in school with each other much of the time, and out of school also sought each other's company. This friendship, to be described at length later, became a very important factor in the development of these two children and of other children as well. At the time this study was begun Lila and Nancy were almost inseparable companions, though unfortunately for our follow-up observations at that time Lila was ill and absent for some time just at the period when observations were being made.

In none of Lila's three experimental sessions did there appear the seriousness and intensity which Nancy showed in the first two. In the first session in the spring of 1935 Lila's responses were somewhat mixed, but all were given with a casual, though self-assured, manner. With regard to hitting, she says she would not do that, even if she were hit first,—though she might have to do it if that were the only way of stopping her aggressor. One suspects her, however, of being somewhat facetious, and her responses are not taken too seriously: "I would run away. I would slide out and run away faster than an auto or a subway." (This was one of the difficulties with the use of the pictures—all the children seemed to get a little bored and to liven the situation by being facetious.) But on the subject of snatching, which was included in this first session, she gave a rather different sort of response. If someone tried to take something from her, *"I pull it away and I take it away and I hide it where he won't find it. . . . Yeah, sure, that's what I should do."* As to taking away something another child is using, *"Not to pull away because they'll cry and that's not nice."*

In general, one might say, from her responses in this session, that she leans definitely—in what she says—toward non-aggression, but, with this, toward sturdy self-defense. In other words, the actual response is not so different from that of Nancy's at the same time: both put down hitting or snatching as "not nice," both say they would hit only if that were the only way of fending off another child's aggression.

The difference in the two children's responses lay in those same "subjective" elements of response which are so difficult to record on

paper; yet these "subjective" elements were usually apparent to both observers. Nancy was intensely serious, Lila was quite casual though firm; Nancy injected a deeply moral tone into the situation; Lila responded just as she might have to any factual material, in a perfectly matter-of-fact manner. And it was this difference which seven months later showed itself in a difference in actual verbal response as well. Apparently it was a difference in fundamental attitude toward the whole problem which, at the age of four did not appear verbally, by the age of four and one-half had carried them far enough apart that what they said was no longer the same. It will be remembered that it was in the fall of 1935 period that Nancy showed intense emotionalism over the whole question and stated that under no circumstances was hitting acceptable. Lila, however, with the same air of casual finality as in the previous spring, says hitting *"is all right."* Why? *"Oh, 'cause. 'Cause I think it is. Sometimes I have to. Sometimes the teacher gets cross and sometimes she's not there and I have to get cross."* In other words, why not hit? There are occasions when it's the only thing to do. And if some other child hits you first? *"Hit them back and show them what it feels like—then tell the teacher."* It sounds like a pretty practical sort of philosophy, and just about as different from Nancy's as could be. Nancy leans over backward in trying to conform to parental dicta; Lila leans over in the other direction in looking at the facts of the situation.

It was seen that by the following spring Nancy had pretty well swung back from an extreme position to one more nearly approaching a mean. Could one have predicted that the same would happen with Lila? It is not possible to say here, except as it may be that the general developmental trend in normal cases and under normal conditions is for extremes in attitude to become less extreme. In any case, that is what happened with Lila as well as with Nancy, and in the spring of 1936 the underlying attitudes toward hitting shown by the two children are very much more alike than six months or a year earlier. Now both approach the question with a good deal of careful consideration, and a minimum of either emotionalism or casual off-handedness. Both say that hitting in general is *"not very nice,"* both give as a reason, *"'Cause it hurts."* How do they know it hurts? Because they've been hit themselves. Nancy says, *"I felt it one time,"* Lila, *"I've been hit before."* It is interesting,

however, that at this period Nancy, the former ultra-conservative, condones retaliative hitting, while Lila, the former liberal, says it would be much better, when hit herself, to *"tell him not to."* Now she says what Nancy said six months before, that it's not even acceptable to hit back. How the strong friendship between these two may have entered into the situation is taken up later.

Other very interesting attitudes on Lila's part toward the question of hitting were observed through the use of other dolls in this spring of 1936 period. The procedure here was to give the dolls the names of various children on the playground and suggest that she make one hit another. In the first part of the situation, she had quite readily made "Lila" hit "Jackie" (an anonymous figure). But to the suggestion that she make either "Lila" or "Jackie" hit "Nancy," there was a definite refusal. "Why not?" *"Because it's not nice—it hurts."* In other words, there is both identification and projection of her own feelings present, and she will not have her best friend hurt. To the suggestion that she make "Holden" (a child known throughout the group for his aggressiveness) hit "Jackie" there was no difficulty—*"Yeah, 'cause they're boys. They're going to be in a fight."* (Another variable in attitude toward hitting.) Again the suggestion was made that "Jackie" hit "Nancy," to see whether the previous acceptance of boys hitting would affect this situation. To this there was a long pause, ending in her suggestion that "Nancy" should hit "Holden," which was carried out. "Now make Lila hit Holden." No, she wouldn't do that. "Why not?" *"'Cause I don't think that's fair—they might do it back."* (Note what "fair" means to this four-year-old.) Apparently, though she wouldn't have her best friend be hit, she did not foresee her friend's being hit back. In her case she saw this possibility clearly enough.

3. *Evan*

The two children already described, Nancy and Lila, were the most verbally gifted of the six children used in the study. Evan was just as old but did not have the same language facility. In fact, he seemed during the first session in the spring of 1935 to be pretty much baffled by the questions. *"I don't know—what do you think?"* was his response to almost every question, and if pressed for an answer he seemed to choose *"Yes"* or *"No"* as he happened to feel like saying at the moment, without really having much com-

prehension of what he was talking about. In fact, although the experimenter injected the word *"good"* into the situation, he did not seem to connect it up with the matter of behavior. His definition of good was "a surprise." Seven months later, however, he was more articulate, though by no means so articulate as the two girls above. He stated quite assuredly that he did not think hitting was "so good" unless one were hit first, in which case "you're supposed to hit him back." On the same day as this experiment, his mother also asked him the same question and his responses were just as they were in the experiment. Hitting is "not nice" but "you can hit back when somebody hits you." (Here enters another variable—most of these parents suggest they would rather have boys be aggressive than "sissies." With girls the attitude is different—witness Lila's statement.) The only difference between his responses to his mother and his responses to us was in the reason given for not condoning hitting. In the experimental situation he simply said, *"I know"*; but to his mother he said, *"Because it hurts."* This, on the whole, looks like a pretty clear-cut response, and especially since in both situations his answer was the same. But even here the repetition of the main question in the experiment brought a changed response. At the very end it was suggested that Evan make his doll hit "Martha," which he did without hesitation. Up to this point he had maintained with firmness that in general, hitting (except in retaliation) was not so good. But when asked again immediately after he had been hitting with his doll, he switched right around: *"Mm-hm, it's all right."* Whether, as it appeared, this change was in order to justify his own behavior, one cannot say here for sure. In any case, it is a very good example of how easily a young child may change his response to meet the exigencies of the moment.

His attitude at this time is pretty much the same as that of the two girls in the following spring. It seems logical, therefore, barring unusual influences between the two periods, to find, as we do, that there has been by that time little change in his responses except that he seems even more sure of what he is talking about. No, hitting is not all right—because it hurts—and if you're hit first, you're supposed to hit back. In other words, he says just the same as he did in the fall. It is interesting, however, that this time it was not possible to trip him as before—and one reason seems

to be that the identification element is missing. It was assumed that at the earlier time he went back on his initial response in order to justify his own hitting, which he would only have done had he felt that *he* was hitting and not just a doll. This time there is no need to go back on what he said before, because he sees quite clearly that they are just dolls and so his own feelings are not involved. He pointed out this difference at the very start. "Is it all right to hit other children?" "No," said Evan, very definitely, "—*but these aren't real, so it's all right—it's not all right to hit real children.*" In other words, it now seems likely that the process of identification—the acceptance of a doll as a surrogate for the real person—was the fundamental factor responsible for his changing responses in the previous situation. In spite of this, however, one interesting bit of identification occurred here. The two extra dolls were brought out at the end of the period and each was given the name of a child on the playground. With the extra boy doll there was much hitting back and forth of dolls, done with a good deal of vehemence. There was also no hesitation in making his doll hit the anonymous girl doll. But with the other girl doll he balked. Because he was bored with hitting? That is possible, since he immediately suggested that he had had enough. And certainly as far as anyone knew he would not have any particular hesitation about hitting the girl whose name was given to the doll. But it also happened that he had a baby sister of the same name as this second girl doll, and when the first girl doll was presented he had suggested that that one should be his sister. How this sister enters his attitude about hitting is discussed later in connection with family background.

4. *Holden, Denison, and Joyce*

The responses of the three younger children show very definitely the difference in age. Holden, who was six months younger than any of the older three children, in the spring of 1935 showed his youth in the extreme aggressiveness and swagger of his responses. "*Put them in jail,*" "*Fight them,*" were typical of all his answers to questions in both series. "*I just hit them with an axe,*" said with an air of pleased finality, sums up his attitude very well. Denison, Holden's bosom companion, who left school at the end of this first year and who was three months older than Holden but not nearly so mature, answered in pure nonsense (e.g., "*I keekee them*") or

saw Holden in every picture and answered in terms of how he thought Holden would behave. Each time, he said, Holden would respond aggressively (*"Spit," "Throw it at him"*) and whatever Holden did was "good." Joyce, the last of these three, showed her youth by contradicting herself every other minute, apparently because it was all a little too confusing for her to grasp (e.g., It's *"not nice"* to hit back, the *"good"* thing to do is *"spank them."*) In other words, for these three younger children, there was nothing in the responses to which one could attach any significance as far as attitudes were concerned, unless it be Holden's extreme aggressiveness.

Since this was the only period in which Denison, because of his later withdrawal from school, could be used in the experiment, we can in his case only point to the influence that his friendship with Holden had on his replies, and that they tended for that reason to be as aggressive as were Holden's own.

Holden, however, we saw once more, in the fall of 1935. By then the aggressiveness characteristic of his responses seven months earlier had entirely disappeared. Hitting is *"not nice." "I don't like to hit."* Even when urged to hit with dolls, he says, *"I don't like to hit people."* However, when asked the thing to do if he were hit first, he says, *"Then I would hit them back,"* and says it with a pleased smile. This same smile appeared each time that the experimenter hit with the dolls or each time that it was suggested that he do so, even though he did not carry through the suggestion. Also he himself gave suggestions that the experimenter do some hitting. In other words, though the responses themselves now very much conform to the standard pattern arrived at by the older children, the act of aggression still seems to give him a good deal of pleasure.

In the case of Joyce, who was seen for the last time in the fall of 1935, responses had also become more clear and definite. Having shown complete confusion seven months before, she has now developed a definite position. Hitting is *"not nice"* under any circumstances—the reason, *"I don't like to be hit."* It is interesting, too, that like Nancy, who was the only other child at any time to say this so clearly and stick to her guns throughout, Joyce shows some anxiety about it. She refuses at the beginning to let the experimenter hit with the doll, and half-way through the questioning she sud-

denly shrinks back and says anxiously, *"Then don't let him hit, will you?"* This anxiety seems to be for her own safety in the situation, a sort of over-dramatization of the whole scene, and is thus quite different from what underlay Nancy's anxiety. Nancy did not object to the experimenter's hitting, but became much upset at the idea that she herself should hit; Joyce objects to the experimenter's hitting but does it quite willingly herself—and the *"I don't like to be hit"* comes to mean just that and that alone. This is presumably the stage before that shown by the older children who said, *"Hitting is not nice because it hurts."* First, it seems you have to find out that it's not nice to *be* hit yourself; only later, apparently, is this projected onto others' feelings as well.

B. Summary of Observations of Aggression in the Experimental Situation

At this point we move from the experimental situation out onto the playground, in order to present what we saw and heard there to tell us more about the attitudes of these six children toward aggressive behavior. But before doing that, it might be well to sum up briefly the material obtained from each child in the experimental situation. Each of these children was a very definite individual, and the usefulness of the material is lost if one child becomes confused with another. *Nancy* you will remember as the child who showed such extreme attitudes of adherence to the *"thou shalt not hit"* doctrine that she almost broke down under it, but who later had swung back to the apparent mean of acceptance of retaliative but not unprovoked hitting. *Lila* was her best friend, who reverted to this mean from the opposite pole of a very practical *"look at the facts"* sort of philosophy and even showed a little more of Nancy's original attitude than Nancy did at the end. *Evan* was the third of these older children who from the beginning pretty much maintained the middle course. As for the three younger, *Holden* was the one who, regardless of his responses, seemed to find a good deal of fun in being aggressive, *Denison* was his best friend who based his "morals" on Holden's actions, and *Joyce* changed from a stage of utter confusion to the stage of knowing she didn't like to be hit. Of these younger three, all had dropped out before the spring of 1936 period.

C. Degree of Aggressive Behavior on the Playground as Compared with Attitudes Toward Aggression in Experiments

It was necessary, in making out scores on aggressive behavior for the four children whose records were adequate for quantitative analysis, to compare them with scores on a larger group. They were therefore computed in the same manner as was done by Jersild and Markey in their study on *Conflicts between Preschool Children* (9). A full analysis of the categorizing may be found in Chapter III of that study. In general, the category *"hits,* etc." included any act of aggression or incipient act of aggression on another's person, *"snatches"* any aggression on another's property, *"verbalizes"* any demand, threat, refusal, calling names, etc., and *"screams"* any crying, screaming, or sign of anger. The child was termed *"aggressor"* or *"victim"* depending on who was responsible for the initial act which precipitated the conflict; he *"won"* or *"lost"* depending on whether or not he won his point or made the last unretaliated move in the conflict. The scores on aggressive behavior were computed on the basis of 150 minutes of observation at each period, as in Jersild's and Markey's study. The scores on these categories for our four children are presented in Table 2, together with the means and sigmas for the particular nursery school group used in the Jersild and Markey study which was most nearly like our own in mean age. This is intended only as a rough estimate of how these four children would compare with a larger group in a similar environment. Therefore no single score is considered other than fairly representative or "average" unless it fails three or more sigma above or below the mean given by Jersild and Markey.

There appears to be only one way in which these four children as a group deviate from the former group studied. This is in their unusually large number of verbal methods used in conflict. There are several reasons why this may be: (*a*) Jersild and Markey found in general an increase with age in use of verbal methods, and these children are older than the average child of their group; (*b*) all of these children had had at least one and one-half years of nursery school experience (three had had two and one-half) at the time these records were taken, hence had had more impact with teachers on the subject of aggressiveness than had the average child in Jersild and Markey's group—teachers tending, on the whole, to re-

TABLE 2

NUMBER OF CONFLICTS AND METHODS OF CONFLICT

(On basis of 150 minutes of observation at each period.)

	Nancy			Lila			Evan			Holden			Jersild and Markey	
	Spring 1935	Fall 1935	Spring 1936	Spring 1935	Fall 1935	Spring 1936	Spring 1935	Fall 1935	Spring 1936	Spring 1935	Fall 1935	Spring 1936	*N*—19 Mean	Sigma
Age in months	47	55	60	54	60	47	55	60	40	48		42.7	(Av. age)	
No. of conflicts	25	21	11	12	15	18	31	21	15	22		16.0	8.0	
Methods of conflict:														
Hits, etc.	11	11	8	4	26	6	11	6	8	30		5.2	3.1	
Snatches, etc.	6	8	5	1	5	9	20	11	6	19		10.8	8.2	
Verbalizes	31	27	23	30	50	24	51	42	11	37		10.0	7.0	
Screams, etc.	0	0	0	3	3	4	4	1	1	1		1.9	2.3	
Aggressor:														
Aggressor	11	8	10	6	7	6	15	8	7	10		8.0	5.9	
Victim	6	11	7	6	7	11	16	9	5	3		5.5	1.6	
Aggressor undetermined	8	3	1	1	1	2	1	5	3	9		2.5	1.9	
Decision:														
Win	13	9	4	6	7	11	21	7	6	5		5.2	3.3	
Lose	8	9	4	1	2	4	7	7	5	5		4.8	2.8	
No decision	5	3	3	6	6	4	3	7	4	12		6.0	3.4	

enforce certain verbal methods; also (*c*) three of these children (Lila, Nancy, and Holden) were, in general, unusually gifted in verbal abilities.

In other ways, the scores of none of these children differ markedly from the averages of Jersild and Markey's group except in two cases: Holden has in the fall of 1935 a high score on "hits" and the same is true for Lila in the spring of 1936. Most interesting is the general trend of scores from period to period: Nancy's scores tend on the whole to decrease, Lila's and Holden's to increase, while Evan is lowest in spring of 1935, rises to high scores in fall of 1935, and shows some decline by spring of 1936.

How do these scores fit in with what the children said about hitting? Does Nancy, the child who was so intense about hitting being "not nice" show any marked deviation in her scores from those of others of her age? She seems on the whole to be not far from average (if anything, somewhat high); furthermore, her lowest scores on aggressive acts occur in the spring of 1936 period when she had apparently changed her attitude to a large extent. Thus her scores seem to go in the opposite direction from what one might expect. The same is true of Lila and Holden: apparently the more they say hitting is "not nice" the more they get into situations in which they hit or are otherwise aggressive. The only way in which superficially the attitudes expressed in the experiment and their behavior on the playground seem to go together is in the fact that Holden's fairly high "hit" score in the fall of 1935 corresponds with the attitude he seemed to show in the experiment of rather enjoying aggressiveness. But even this was "attitude" and not "verbalization." Otherwise, there seems to be fairly little in the experimental situation which would point to the scores obtained. Why is this?

The main reason seems to be that each situation put down as a "conflict" for purposes of tabulation had so many angles to it that it would require a highly refined technique to catch the shades of differentiation in behavior and reasons for behavior. There is no doubt that Nancy or Evan or Holden was involved in as many conflicts as were tabulated or that they committed acts of physical aggression just as frequently as the scores show. But what was behind these aggressive acts—the attitudes, the feelings, the motivation, the circumstances—is what is needed here. In the experiment we were trying to obtain verbal attitudes. We could not be sure

from the material obtained there alone whether these attitudes were what they appeared to be. But we knew, at least, that between attitude and behavior is a long and devious road with many detours and by-paths along the way. To point out, so far as we can, where the detours lay is the aim of this analysis of the children's behavior.

First of all, we found no outstanding differences in degree of aggressiveness between these children and others of their age, except that Holden seemed somewhat more aggressive than most children of his age, in the fall of 1935, while Lila in the spring of 1936 made a somewhat high "hit" score. But mere number of acts of a certain kind is not the only measure of degree, for by definition the category *"hits,* etc." included *any* act of physical aggression on another's person which resulted in or was part of a conflict—in other words, everything from a threatening gesture to a knock-down blow.

D. Analysis of the Nature of Aggressive Acts

1. *Nancy*

With this in mind, let us see what, for example, Nancy's *"hits,* etc." score in the spring of 1935 is reduced to. We had, in this period, a count of seven "hits" for her, which, when corrected for attendance, gives her a score of eleven. The following is an account of these seven acts: Two took the form of pushing another child a couple of times, pushes that were mild enough that they could hardly even be called "shoves"; in another case she pulls at a child, but again not really hard enough to accomplish anything; there is one out-and-out hit, in return for a hit received; again she pushes a child, getting her out of her way; and in the last fight in which "hits" occurred she was pushed and first pushed in return, then chased the child away (*"chasing"* also counted as an aggression against another person). In not one case could she possibly have hurt the child physically by what she did, and that could hardly be called outstanding aggressiveness—in fact, her aggression is pretty mild at this period. Furthermore, of the seven acts in the general category of aggressions against another's person, only one was actually a *"hit"* (the subject talked about in the experiment) and immediately she showed tremendous guilt over it, even though she was hit first; another child hit her, she hit back, and immediately retired from the scene of action. She walked off away from the

other children and said to herself, *"Oh, everyone has to sit down and think what they did."*

So actually in this spring of 1935 period at least, her very high standards as expressed in the experimental situation seem to carry pretty well into her behavior; though her score on "hits" is not especially low, she seems on the whole to be more non-aggressive than aggressive, and as the circumstances in which these conflicts occurred are presented, this will become even more clear. Certainly the extreme guilt that caused a four-year-old child to step aside and condemn her own behavior in the case of the only real "hit" ties up well with her seriousness in saying in the experimental situation: *"I want to be good because my mother and father say I should, so I'm trying my best."*

In the fall of 1935 we saw real anxiety in her responses to our questioning. She seemed then to be fighting to live up to what her parents had said, i.e., that hitting is never a good idea. Does this, too, show in her behavior? At this time her "hit" score is again not far from the average: a total of 13 which, corrected for attendance, gives a score of 11, the same as in the previous spring. What about these 13 "hits"? Not one of them is an actual "hit," nor is there one of the 13 that could have physically hurt another child. One is a case where another child is making the aggression and she simply tries to push him back; in another she grabs hold of another child to keep him out of harm's way, but because he resents it and fights it off, it had to be put down as the cause of the conflict and a means of "aggression"; two are "chasing"; in one she pulls a child's arm, trying to get her to play with her; and in all the rest she is simply being annoying—picking at a child's shoe, etc. All of these, of course, fall under the definition of acts directed against another person, and they can be as infuriating as an actual hit; but they are not what one could call real physical aggressiveness, in which the other child might be physically hurt (the first reason children give for not hitting). In other words, Nancy is still at this period as relatively non-aggressive as in the previous spring. She does not hit, she does not do anything that could physically hurt another child; and again her high standards of adherence to parental dicta seem to carry over into her behavior.

But what about the following spring, when her standards, according to the experimental situation seemed to have changed? She

said then that it was all right to hit if you were hit first, and she was even much less serious about any kind of hitting. At this time she was marked down for 13 "hits," giving her a weighted score of eight (through correction for attendance). The fact that 12 of these occurred in only two different fights seems to indicate that now she gets into fewer fights in general (note lower total conflict score), but once started she keeps on and on. Again, as in the previous fall, there is not one out-and-out "hit," almost all are "pushes." But in only one of the 13 is she doing it in retaliation. In the two conflicts mentioned she simply gets at another child like a dog with a bone and doesn't let go. The longer of these is a part of the rivalry which grew up between certain children in the group and as such is discussed later. The other is a good example of this "keeping at" another child, which shows up in numerous purely verbal conflicts as well: A group of children, including Nancy and Lila, are planning to stage a "play," for which they are making preparations. No audience is allowed until the stage is all set.

The record reads:

> Marie approaches. Lila says, *"Go back, we're not ready,"* and pushes her. Nancy goes over and pushes her, then as Marie starts off, Nancy follows and keeps on pushing her. Marie stops several times, Nancy follows and pushes her each time. Marie says something in an angry tone. Nancy says, *"But whenever I go back you start stopping."* She returns to the play and Marie goes off.

In no conflict in the previous spring or fall is there any incident similar to this one, in which Nancy keeps going after a child on her own; always before she desisted almost immediately. Thus with the relaxation of her standards she does not become more generally aggressive, but she does, in a conflict, keep after a child in a way she was not inclined to do before. It is also interesting how little she is ever attacked physically by another child. Since the "aggressor-victim" scores include verbal aggression or aggression on material, this does not show in the scores. But actually she is very seldom physically attacked, and so there is very little call for physical retaliation, whatever she may think of it. In other cases it will be seen that physical attacks by other children are much more frequent.

On the whole, then, taking into account the kind of "hits" that make up her score, there seems to be a rather close correspondence

between Nancy's apparent attitude toward physical aggression as seen in the experimental situation and the degree of her aggressiveness on the playground. Is the same true in other cases?

2. *Lila*

Records on Lila in the spring of 1935 were, because of her absence, too few to score for conflicts. But in the fall of 1935 the number of tallies in the *"hits,* etc." classification is five, which when corrected for attendance makes a score of only four—lower than that of Nancy, who was at this time a strong pacifist, apparently in deed as well as in word, while Lila was advocating hitting as being a necessary weapon. If there were the same correspondence between attitudes and behavior in Lila's case as in Nancy's, we would have to find at least that all of her "hits" are true hits since there are so few to start with (only five out of three and one-half hours of observation is a small total for all kinds of physical aggression). But they are not; in only one instance does she really hit; while two other instances (one bumping a child with a sled, one getting on top of a child) might be considered really aggressive. In other words, Lila, who says so confidently that hitting's all right, does practically no more actual hitting than Nancy who says it's never right. And in the following spring what she says in the experimental situation (that hitting isn't so nice even if you're hit first) has even less relationship to her behavior on the playground. She exhibits a total of 31 "hits," which corrected for attendance is a score of 26, a very high score as compared with Jersild and Markey's group. And here the majority of the "hits" are out-and-out physical aggression.

The following is an example (note how the conflict starts in defense of Nancy, continues on her own):

> Lila watches Nancy swinging on a bar. Marie pushes Nancy (apparently to help her swing). Nancy says, *"No, Marie."* Lila goes over to Marie, hits at her and pushes her away. Marie pushes Nancy again. Lila shrieks, *"No, Marie!"* and pulls her. Marie pulls at Lila. They hit at each other. Marie runs off and Lila chases her around the gym, calling, *"I'm running in back of you."* She catches hold of Marie and pulls her by her sweater. Marie twists Lila's hand. Lila screams, *"Don't! That's not what I did. Shut up!"* She kicks Marie hard. Marie runs off. Lila follows her, and Marie turns around

and kicks her. Lila yells, *"You kicked me in —"* (at this point another child comes up as arbitrator and the fight is ended).

On other occasions she throws sand at people, throws books at them, etc. Not all of the "hits" are of so violent a nature but most of them are, and enough to say that in Lila's spring 1936 records there is very much more aggressiveness than in her fall of 1935 records, though her responses to our questioning go in just the opposite direction. In other words, there seems to be no way of telling from children's responses to questions what their behavior may be. Can one tell what the underlying attitude may be? Lila's response to the approaching arbitrator in the above conflict is, *"I want to tell you how we got into a fight. I told Marie to stop and she didn't and I told her not to push Nancy 'cause Nancy didn't want her to, and she still wouldn't do anything."* This rationalization of her behavior is a good picture of what she said at this time: *"It's better to talk to them."* But it is far from serving as an indication of what her behavior might be.

3. *Evan*

Evan's scores on hits are not high at any time. The category of "hits" never shows more than 11 cases (weighted score). There are attempts to push away children who bother him in his play; there are a number of real hits and kicks when he is attacked; and a few cases in which he hits or threatens to hit (e.g., raising shovel above another child's head) without having been attacked physically himself. In other words, at all periods he seems to be moderately aggressively physically—more so than Nancy, less so than Lila in the last record period. He had told us in the experimental situation that *"you're supposed to hit back,"* which is very definitely his course of action in every case; but he also does some unprovoked hitting, which he did not put down as acceptable.

4. *Holden, Denison, and Joyce*

As for Holden, one need only look at his hit score in the fall of 1935 to see that he is outstandingly aggressive, though he had by this time changed his tune to the effect that hitting was "not nice." However, from the attitude shown it appeared that on the whole being aggressive was definitely satisfying. These "hits" of his are by no means playful pats. His "tough guy" attitude appears in all

sorts of situations, and even more so in the fall of 1935 when he said he did not approve of aggressiveness than in the previous spring when his response was in the *"hit them with an axe"* vein. For example, in an incident in early 1935 he saw another child with a ball and went up and pushed her. When she protested he said, *"You don't want that ball,"* and pushed her some more—and the more she protested the more he pushed her until she dropped the ball. In another incident Denison, his bosom companion, protests at Holden's pushing at his tricycle. Holden says, *"Ride on my foot."* Denison runs his tricycle over Holden's foot, saying, *"I did."* Holden: *"See—it doesn't hurt."*

In the following fall he and another boy start out to whip a third child with a rope, but instead Holden has the idea of tying the rope around the child's neck. The teacher just saves this child from strangulation. Among his other misdeeds are: knocking a child in the eye with a broom handle, throwing dirt, slapping a child's face, getting a child into the corner of a packing-box and pummeling him in the face with his fists. Among his threats are: *"I'll beat your brains out"; "I'll get a knife"; "I'm going to get a bow and arrow and kill you."* No matter what he may have said in the experimental situation, it appears that other things were more important than that hitting was "not nice." In fact, he probably thought it a very good idea. He was, during both of these years in which the study was made, one of the youngest and smallest of the children in his group. He needed some means of gaining prestige, and his reputation in the group for just this kind of behavior gave him a good deal of it. *"Get Holden to hit him"* was not an uncommon thing to hear. (See later incidents.)

On Joyce and Denison the scores on aggressiveness are difficult to interpret. In any case, all that came out of our questioning Denison in the spring of 1935 was that his standards seemed to run according to Holden's behavior. There is one incident at that time in the children's conversation which may tend to confirm this attitude. Jerry and Denison are discussing what they will do to a third child, Denison having made the derogatory comment that *"He's a cry-baby"* and *"I'm going to put a house on him."* Jerry carries on with, *"And put a rock on him and he'll be dead before he's a big man."* Dick laughs, *"Yeah,"*—*"And Holden will."* It's not quite clear what Holden is going to do, but mention killing and Holden pops into Denison's head.

As for Joyce, her remarks in the experimental situation in the spring of 1935 were rather confused, while on the playground the few incidents in her records that might possibly have become real conflicts never became such because Joyce gave up when even a purely verbal attack was made. For example, in one of the few *records taken on her at this time,* Holden *ran up, took hold of the* tricycle she was riding and said, *"Denison's riding that! How many times do I have to tell you?"* Joyce: *"Lila Smith said I could have it."* Holden: *"Well, when you're through, will you give it to Denison?"* Joyce: *"Where is Denison?"* Holden: *"He's inside resting."* Joyce at this point simply got off and left the tricycle. (Joyce was also one of the youngest and smallest in the group.) The following fall, however, when such timidity showed itself in the experimental situation, she was running the whole show in her new group (in which she was no longer one of the smallest) and using any means to run it. These records were not tabulated simply because she went so hard and fast that it was impossible for the recorder to keep up with her. But the following excerpt is typical:

> Myrtle walks away from Joyce. Joyce calls, *"Stay here, I'm playing with you."* Myrtle goes to slide. Joyce goes over and pushes her away. *"You're going to slide with me."* Myrtle tries to push around her to the slide. Joyce pushes her back. Myrtle whines, *"No."* Joyce keeps on pushing her away. *"No, first I go."* Myrtle whines and says something. Joyce: *"Let's see who's crying first."* She pushes Myrtle to other end of slide and looks around. Mytle: *"No."* She tries to go back to slide steps. Joyce pushes her back. *"No, first two slides and then come."* Myrtle: *"No."* She slips around Joyce and goes to slide steps. Joyce goes over and pushes and pulls at her. Myrtle whines: *"No."* Joyce, *"Listen, now listen."* Myrtle whines. Joyce continues to pull at her. Carol Ann comes up to Myrtle and says, *"You be a very good girl and—."* Joyce pushes Carol Ann away, says to Myrtle, *"All right, one slide."* Myrtle goes up steps of slide.

If there was any moment at this fall of 1935 period when Joyce was not thus actively occupied (except when engaged in routine duties) the observer failed to catch it. And yet in the experimental situation she showed quite a degree of timidity.

E. Analysis of Circumstances in Which Aggression Occurred

Another way of inquiring into actual degree of physical aggressiveness is to study the circumstances under which the "hits" appeared. Were they initiated by the child in question or were they in retaliation? Were they with the support of friends or in one-to-one conflicts? Were they over important issues or relatively trivial details? In most cases the number of different conflicts at each period in which "hits" occurred were so few that percentages as such mean very little: just a few more conflicts in which circumstances fell in one direction or another might make a decided change in percentage. Yet it is interesting to see just what did occur.

In Nancy's case, in the conflicts in which "hits" occurred, the circumstances of the conflicts very much bear out the finding above that she was at all three periods quite a non-aggressive child. Not only were there few "hits" at any time which could really be termed physically aggressive but the majority of those that did occur were with the backing of another child. In the spring 1935 period there were only three different situations in which "hits" occurred and in only one was she alone on her side (and it was in this one that she showed real guilt over her hitting); of nine in the fall of 1935, she was alone in only four and in one of these she was trying to shove a friend out of danger; and in the three in the spring of 1936 she was in each situation egged on by a friend. In one of these she alone made the actual aggression, but immediately showed remorse over it. She had been ordered by Randall to *"go get Grant"* and Nancy went over and pulled at him. But she came back without him saying, *"I didn't want to get poor Grant because he was crying."* Thus Nancy has not only a low score on actual "hits" but even in the majority of these she needs the backing of another person before she can be aggressive.

In the case of Evan, however, who makes even lower total "hit" scores than does Nancy, the situation is quite different. In the spring of 1935 there are five situations, and in the fall of 1935 nine, in which "hits" occur. In every one of these he has no support whatsoever, but is striking out entirely alone. In five of these he is the aggressor, in nine he is hitting back. In the spring of 1935 there are six conflict situations in which hitting occurs; of these three are initiated by Evan alone, three with the connivance of another

child. Putting this together with the finding shown above that a number of his "hits" are real hits, his score shows him to be a rather aggressive child, though his actual hit scores are no higher than Nancy's. If attacked, he showed no compunctions about slapping back. Often, too, he flew into a rage and hit somebody just because he had to hit something. For example, in one instance he had threatened another child with running his tricycle into him. That child put his hand on the wheel of the tricycle to keep him from doing it and, quite accidentally, the tricycle toppled over, carrying Evan with it. Evan bursts out crying, gets up and says, *"Who did it!"* He hits furiously at Jerry (who had nothing to do with it but happened to be there). He also hits when another child does not comply with his suggestions as to how something should be done. Evan stands holding broom and watches group. Goes up to Bernard and says, *"Hey, get out!"* Pushes his broom against Bernard's rake. Bernard: *"No"* and pushes back. Both push. Evan: *"This is the way the broom is going."* Bernard: *"No,"* and tries to push Evan's broom away. Bernard: *"You!"* Evan: *"You're no good! I'm going to have some of that"* (sand Bernard had raked up). Bernard: *"No, you can't."* Evan: *"Yes!"* and lifts broom as if to hit him. Catches teacher's eye and lowers it. He "hits" when he wants to play with someone and doesn't know how else to begin. Goes over to Bernard and pushes him several times, saying, *"Yum-yum-yum!* Bernard: *"No, don't."* Evan says, *"I'm going to get the bike"* and leaves. He hits apparently just for the fun of it (with the backing of another child). Watches Nell and Mary in sandbox dropping bits of sand down. Evan: *"Stop putting it in the mud. I'll tell the teacher."* They stop. Evan says, *"I'll sock you in the face."* Jerry repeats. Evan: *"I'll sock you in the face with the shovel. I'll make you like Morris and I know how it feels."* Nell and Mary just look at them. Evan: *"You better not do that or I'll say 'Shut up!'"* Jerry: *"And I'll throw sand on you."* Jerry picks up a little sand and tosses it at them. Mary leaves. Evan pushes sand with shovel at Nell, etc. He hits when he wants another's toy badly enough. Runs to rings where Nancy and Lila are playing, says, *"I want it."* Lila: *"No, I."* Evan goes up and snatches rings from them. Nancy withdraws but Lila tries to hang on. Evan kicks Lila. Lila cries, hits Evan, and goes off to tell the teacher. In other words, he hits for a great many reasons, not only with what seems

like sufficient provocation but also without—and is quite unlike Nancy, who seldom hits at all unless another child begins it.

The same is in general true of Lila and Holden also—that they hit in all sorts of situations and under all sorts of circumstances. It was shown above that both were rather aggressive children, even when one looked only at the acts of aggression themselves—that their high "hit" scores actually seemed to mean high physical aggressiveness. And this is borne out by a study of the conflicts in which their "hits" occurred. In Lila's case, of the 11 conflicts (involving "hits" on Lila's part) which occurred in fall of 1935 and spring of 1936 together, she was the aggressor in eight; in eight she was alone on her side. The incident quoted above in which she attacks Marie quite violently when Nancy had asked Marie not to push her in the rings shows how little provocation is needed for her to rush into combat. The same is true for Holden. In the spring of 1935 there were five situations in which he "hit"; in only one did he have any backing and that was rather passive verbal backing on the part of Denison. In the fall of 1935 there were 13 different situations in which "hits" occurred and in all of these Holden was alone on his side or else had been asked by another child to settle a conflict for that child and took the active aggression into his own hands. He, too, is easily roused to battle, and once started he does not give up until he wins or the teacher comes into it. For example: (a group of children, including Holden, have turned a bench in the gym upside down and are climbing around on it.) Henry comes up and gets on bench. Holden: *"You can't get on this!"* and hits at Henry. Henry kicks at Holden, moves back. Holden says something to William on bench and pounds him repeatedly on the back (previously they had been arguing as to how the bench should be fixed). William gets off, goes at Holden and tries to choke him. Henry hits at Holden. They stand back and look at each other. Holden hits William hard, again and again. William: *"My grandpa's going to tell you on his —."* Holden hits him. William hits back. (Teacher intervenes.) There certainly seems to be little correspondence here between what he said to us and his behavior, for this incident occurred in the same week that he told us hitting was "not nice."

There seems then to be no consistent relationship between what the children say about aggressiveness toward other children and

the degree of aggressiveness they show. One child says, *"hitting is not nice,"* and does very little hitting. Another says the same thing and does a great deal. One says it's all right to hit back when you're hit first, but seldom does even that. Another says it's not all right and always does. One child changes her verbal response after a period of months but apparently changes the degree of her aggressive behavior very little; another changes her response while her behavior continues even more strongly in the original direction than before. The reason for these apparent inconsistencies seems to lie in the fact that countless influences from many directions are shaping both attitudes and behavior, and in no two cases are the influences the same, nor do similar influences act on any two children in the same way.

F. Summary

In this chapter we have seen a variety of verbal patterns and feelings about hitting emerge in the experimental sessions. We saw Nancy's consciousness of morals, her anxiety about hitting, and finally her more matter-of-fact explanation of the realistic basis for hitting in the fact that it hurts. We saw Lila, more casual, more confused than Nancy, at first showing non-aggression attitudes together with assertion of the need for self-defense, and later a shift in the direction of less aggression. Evan agreed that hitting "wasn't nice," but that "you hit back when somebody hits you." In contrast with the relative clarity of these children, the three youngest were vague, confused, and evasive at first but later became more articulate. Holden at the end gave lip service to the idea that it wasn't nice to hit, but appeared to derive definite pleasure both in connection with the idea of hitting back and in the game of making the dolls hit. Joyce reflected the most insightful ethics: *"It's not nice to hit because I don't like to be hit."*

When we analyzed what the children actually did on the playground we found little consistent relation between the attitudes apparent in the experimental situations and the children's behavior at free play. Lila, who says at first that hitting is all right, does no more hitting than Nancy, who says it is never right. Subsequently, when Lila says that hitting isn't nice, she is actually found engaged in frequent conflicts. Even if one assumes that this changed point of view has emerged from her contemporary experience this

does not affect the fact that a mechanical comparison of the results of experiment and observation would show no such relation.

We find, then, a picture of children's verbal patterns, feelings, and behavior in flux in different situations, being changed from one year to the next as a result of a variety of influences which we shall discuss in detail in the following chapters.

III. INFLUENCE OF PARENTAL AND GROUP ATTITUDES ON THE CHILD'S ATTITUDES TOWARD AGGRESSIVE BEHAVIOR

In the preceding chapter, where we described the verbal patterns and feeling of the children in the experimental situations, and compared them with the children's behavior on the playground, we assumed that the point of view of each parent might be an important influence in the development of both attitudes and behavior.

In order to obtain further information concerning parental attitudes, other than what could be derived from the children's *"My Mommy said so,"* etc., informal interviews were held in the fall of *1935 with the mother or father of each of the children. The decision* whether to interview mother or father depended chiefly on the convenience of the parents themselves. The parent was encouraged to express his or her own feeling about children's hitting one another and to discuss any aspect of the family situation which seemed especially significant to the problem (e.g., sibling relationships or parental differences in attitude.) It was interesting that in each case, though reference was made by the interviewer only to the subject of children's hitting one another, the parent immediately related it to more general problems; the mothers were particularly interested in aggressiveness as it related to the whole personality development of the child, and the fathers launched into broad discussions of pacifism and international relations. The interest which they exhibited in the problem indicated that we were at least receiving some frank information about conscious parental attitudes.

In reporting the point of view of the parents, we will continue roughly the order of the preceding chapter, discussing first the point of view of Nancy's father, then attitudes of the parents of Lila, Evan, and Holden in turn.

Nancy's father started by saying that he wished Nancy to learn that hitting was not right under any circumstances, even if she were hit first—which is just what Nancy said to us in her first two sessions. He stated most emphatically that hitting was to be looked upon only as a last resort, and wished her to learn in any situation to try other methods first. Furthermore the influence of his attitude on the child probably was reinforced by the fact that Nancy seemed to have an especially warm relationship with her father.

He brought her to school each morning, and the following was a typical observation:

> Nancy and her father came to playground entrance. Nancy steps out onto playground, leaving father at door, walks around, then runs back to door and kisses him, *"Goodbye, Daddy."* She runs out onto playground. Father watches a moment, then leaves.

Further evidence of this relationship is that Nancy was more likely to bring her father than her mother into conversation at school. True, on two occasions in "family play" she said, *"I'll be the mother"* and once in conversation with her on the subject of fudge, commented that *"my mother makes it—oh, it's so tasty"*; but "my father" seemed to be the one who carried more weight. Aside from the fact that he was mentioned somewhat more often, witness the phantasy that Nancy was enacting all by herself one morning:

> She climbs board up to top of packing box, says (to self) *"I like this thing,"* and pretends to pick something from board. *"I'll go to my father downstairs."* She climbs down and goes to opening of box: *"Here, Daddy"*; pretends to put something in box. She goes up board again. *"I can see a nice rose. I slide down."* (Goes down board.) *"Aren't those pansies and roses nice, oh dear father."* She gets in box and holds out her hand as if giving something to someone. *"Here, father. Here, Daddy. Here and here,"* picking at board and at ground. *"Now right down here* (under board), *be very nice. Upstairs on the roof* (goes to jungle gym) *to see if the clothes are drying."* (Here she was interrupted by other children.) Note her phrase *"be very nice,"* as compared with her ardent desire to obey parental rules at this time (spring of 1935).

One other item seems to bear out her feeling that the father-daughter tie here was strong. Nancy said to her mother one day, *"What's the smallest thing in the world you can think of?"* to which her mother replied, *"Oh, maybe this little seed."* Nancy: *"Well that would be how much I love Daddy more than you."* The impression here is that she really does love her father somewhat more and feels a little guilty about it. It may be assumed that the strength of the tie between these two means that the father's opinions and feelings will have a strong impression on the child's—and especially toward her own behavior. Thus the high moralism

of her responses in her first two experimental sessions is undoubtedly a direct reflection of the strength of this parent-child relationship.

To most children parents are necessarily the most important persons in the world, regardless of the exact nature of the relationship. In Lila's case we note the marked similarity between her utilitarian attitude toward hitting in the fall of 1935 and her mother's attitude at approximately the same time. Lila's mother felt that hitting was in some situations quite necessary. For example, she said that during the previous summer Lila had played quite frequently with a child who was very aggressive, and when she used physical means to hold her own, nothing was said as the mother felt it was the only thing Lila could do. (Compare this with statement of Nancy's father that if she hits, the procedure is to separate the children and "reason it out" with them.) Moreover, Lila's mother had herself for a time been a teacher in the nursery school which Lila attended, so that not only at home but at school as well—that is, in the situation about which we were questioning her—the child had had plenty of opportunities to receive the impact of her mother's attitude. Lila did not often mention either of her parents at school, but when she did it was generally with the air of *"My parents are pretty important people."* For example, Nancy says to her one day, *"If your mother didn't forget last night, I might go to the Planetarium with you,"* to which Lila answers, *"Well, my father and mother have to remind parents, that's why they couldn't go. They have to remind parents."* Probably she is referring to a parents' meeting the previous evening, though her exact meaning is as hazy as it appears. Here there is especially clear evidence for the mutual respect of parent and child that underlay their sharing of one another's outlook.

Up to this point we have referred simply to the relations of parents and children, whom we have just discussed, for Lila and Nancy were both only children. But our problem now becomes more complex. Evan, Holden, and Joyce had all had competition with siblings to contend with as well as parents' attitudes toward their behavior with brother or sister. In Evan's case, the sister was younger by three years and his early rough treatment of her had created special parental rules. It was noted in the experimental situation that he continued hitting dolls with dolls quite willingly up to the point when the doll with his sister's name was produced,

whereat he balked. The fact that the mother told us that he had received specific instructions against hitting his sister *"and has now learned to be gentle with her"* reveals again the weight of strong parental pressures, and the carry-over into the experimental situation. This is further borne out by the fact that he had not received such strong indoctrination against hitting in any other situation. The parents felt that in general they wanted him to learn that hitting was not a very good idea, but on the other hand had been rather dismayed at Evan's development. The father, especially, said he felt that Evan was too timid, physically "a coward," and that he had definitely been teaching him to fight back rather than "come crying and complaining." Thus Evan's *"you're supposed to hit them back"* is a direct reflection of parental teaching. He definitely was "supposed to," if he abided by parental dicta.

Holden's sibling was an older brother, just two years older. These two boys together with their father formed a threesome who wandered together during free hours into whatever paths their feet happened to lead them. The father was not a person who tried to protect his children from unfortunate experiences, though he regretted them if they occurred; rather, he enjoyed sharing with them their curiosity about anything and everything. They were free to inspect any corner they showed an interest in and to make friends with any child they met in any street.

Holden had seen policemen beating up a negro whom they had caught shoplifting, and Holden had himself taken part in a bit of gang warfare. This latter incident and what the father had to say about it was indicative of his own attitude toward aggressiveness. It occurred in the park one day, where Holden and his brother had gone for the afternoon with a friend of the family. This park is near a negro district and probably more negro than white children are generally to be found there. Since it was always taken for granted that the boys could pretty well look out for themselves, no special watch was being kept on them. The friend became interested in his book, suddenly looked up later to see two gangs of boys, one negro and one white, hurling rocks at each other with much vim and apparently a good deal of feeling. Holden's brother was up with the group of white boys doing his part, while Holden himself was ranged with the negroes doing an equally good part. (He was a good deal less than four years old at this time.)

It seemed perfectly obvious that neither of them, and especially Holden, had much of an idea of what they were doing—and this was the point the father discussed with them later: "*You must not fight without knowing what you're doing.*" He was not concerned with the fact that they had been fighting, but he was concerned with the fact that they did not know why they were fighting. This was in general his way of responding to aggressiveness,—a habit which, through their companionship with their father, the boys would be most likely to pick up. He seemed to feel that thinking out the best way of attaining a desired end was the point to be emphasized; in most cases, he said, this would not be physical force, but, on the other hand, he had no objection to its use. (It is interesting that both Nancy's father and Holden's father are ardent pacifists and working toward the same goal for their children—that they grow up with a set against war.) As a matter of fact, he felt that Holden needed some techniques to contend with his older brother's aggressiveness, and "*he* (Holden) *has all the technique of a prize fighter.*" (He certainly appeared to have, on the occasion that he got an older and larger child into the corner of a packing box and pummeled him in the face with his fists.) What Holden said to us in the spring of 1935 about "*Hit them,*" "*Fight them,*" etc., was not at all out of line with his father's assertion that Holden especially needed a few techniques for holding his own. As a matter of fact, when we told the father that Holden had said to us in the fall of 1935 that hitting was "not nice," the father's response was that "*Holden was fooling you.*" But it is interesting that the mother sometimes had said just this to Holden—that hitting was "not nice"; and when Holden is called upon to say to another woman what he thinks, he picks up something he has heard his mother say and behaves as his mother apparently would like him to behave, i.e., refrains from hitting with the dolls. Thus at that time we really saw in Holden's responses two conflicting feelings about aggressive behavior—his mother's in what he said, and his father's in the open-minded attitude shown by his acceptance of our hitting and by his suggestions that we hit.

In some cases, then, verbal emphases of parents and children seem to run pretty closely together. Can the knowledge of parental viewpoints help us still further by explaining some of the discrepancies found between the children's assertions about aggression and their

aggressive behavior? In some cases, yes. Certainly it seems somewhat more logical that Holden, with his father's attitude to back him up, should have shown high aggressiveness in the fall of 1935 when he told us that hitting was "not nice." And Nancy, with her father's pacifist viewpoint behind her, continued to be relatively non-aggressive in the spring of 1936 though her attitude as expressed to us was different from what it had been. Hers was a particularly interesting case in the light of parental attitudes; for even in the fall of 1935 when Nancy and her father were equally vehement against hitting, her father nevertheless was beginning to have some doubts. He was convinced, he said, that physical force was not right under any circumstances—but later he confessed that in a way he was not so convinced. He realized that by his stress against hitting, Nancy was hard put to it when up against the aggressiveness of another child. He saw her on one occasion join in a game with another child simply because she knew she was going to be hit if she didn't—and he himself felt baffled as to how to handle the situation. *"But,"* he said, *"I'm not telling Nancy my doubts."* It may have been that Nancy had nevertheless divined some of these doubts and hence was not phantasying in quite so far-fetched a manner as it appeared when she said, *"That's what my mother tells me every night"* (that it's all right to hit back.) This would help to explain, too, why in the spring of 1936 period, though she was no more frequently aggressive than before, she did enter conflicts more often on her own and less often seemed to need the support of another child.

Lila too had by the spring of 1936 shown a change in expressed attitude toward hitting, being at that time more conservative. It may have been that this, too, was related to parental attitudes. Though the mother continued to believe that hitting was necessary under certain circumstances, she also had come to feel that Lila had been falling back too much on parental support in adjusting difficulties with other children (in contacts outside of school). Hence when conflicts arose the mother was more and more keeping out of the situation entirely and refusing to act as arbitrator. It is just possible that Lila may have understood this withdrawal of support in arbitration as also a withdrawal of support for physical retaliation; if so, this may partly explain her expressed moral objections to hitting in our experimental session.

But there is another though less direct way in which parental attitudes might have been functioning. It is more than likely that the experimenter was to the child not just an objective listener, a person with whom the child could talk perfectly freely about his feelings; rather, the experimenter, being an adult, probably seemed something like a parent and something like a teacher. If this were the case the child would presumably tend to say what he thought would be acceptable to parent or teacher or both. What would he have said had an adult not been present? On the playground or in the nursery schoolroom it was possible to catch remarks made by the children to each other which were not directly under adult influence. They were relatively free observations made by one child to another, with no teacher near to overhear. True, the observer was present and the children knew it, but they were accustomed to her presence on the playground and they knew that she exercised no authority over them; moreover, they showed in no way any feelings of inhibition because of it. The only persons to whom they were apparently responding in the immediate situation were other children. Thus by putting the attitudes expressed to children alone against those expressed to us it is possible to some extent to judge the influence of the parent through the presence of the adult in the experimental situation; in the latter situation the adult is not a bystander, but an active social stimulus, asking questions and requiring responses.

Attitudes as Expressed to Other Children

Here it is necessary to differentiate between those judgments that were given in the heat of battle, so to speak, and under the influence of emotion, and those that were by-products of a conversational interest in playground events or in general "rules of the game." The chances are that those given under the heat of emotion represent the more primitive, utilitarian attitudes while those expressed at other times involve a larger degree of thought and consideration. In the former one may expect to find all sorts of contradictions, and especially contradictions with what was told us in the experimental situation. And yet there is just enough similarity between these heat-of-the-moment judgments and what was said to us to convey the impression that we were dealing also with a whole new sphere of influence—the factor of actual experience in child-to-child conflicts (to be discussed in more detail later).

Nancy was, as in the experimental situation, one of the most explicit on rules in general, with a pretty clearly-defined morality, changeable as it was. Obviously this morality was more sure and clear-cut in the later stages than the earlier. It was also less perverse. The incident in which she showed extreme guilt over her own hitting in the spring of 1935 by saying *"Oh, everyone has to sit down and think what they did"* occurred on the same day and within 15 minutes of another incident in which she seemed to get great satisfaction out of having been aggressive in another situation, but in a somewhat less frank way and with the support of another child:

> (Grant, Jerry and Nancy have been playing together). Grant goes over to Sally and Alice at cellar steps and says, *"That's our house."* Nancy follows and repeats. Jerry follows and repeats, takes hold of Sally's arm and pulls her. Nancy watches him, then as Sally goes off follows her, pushes her several times. Then stands and looks at her, says, *"There, I foshed her. There, we foshed her."*

Apparently she derives a good deal of support from the fact that another child started it, and thus is completely happy about it. And so out of one situation in which she exhibits aggressiveness there seems to come a good deal of guilt, while another on the same day seems to give her a good deal of satisfaction. It looks as if the initiative and support of another child helps her to achieve that satisfaction, even though her behavior is in direct contrast to the parental dicta which to us she so strongly upheld.

When her feelings are not immediately involved in the situation, the weight of evidence seems to fall mainly on the side of aggressive behavior rather than against it. For example, Janet suggests to her one day that she (Janet) will hit another child if he takes something from them and Nancy replies, *"Yes, that's not nice."* On another occasion, several children are playing at the sandbox with very little interchange of conversation, Nancy being among them. Morris pulls a scoop away from Nell and Nancy applauds him with, *"Good for you, Morris, you were a good strong person."* But she was a splendid arbitrator, too. Morris and Jerry were arguing over possession of a scoop that Jerry had and Nancy suggested: *"Well, I'll tell you—Jerry can have it a little longer, and then Morris can have it"*—to which Morris responded by getting another scoop. Or, in another instance, when Jerry does not want to leave the sandbox for

fear Evan will take his scoop, Nancy says, *"When Jerry is gone Evan can play with it, and when Jerry comes back Evan will give it to him"*—at which Jerry leaves quite willingly. The strong pacifism expressed to us seems to be a many-sided sort of thing. Her reactions to her own behavior seem to depend pretty much on circumstances. When her feelings are not directly involved she lauds aggressiveness and yet at the same time has an apparently keen consciousness of rules and regulations such as few children have by the age of four, and makes an excellent pacifist in handling others' disputes. It is certainly a more practical attitude than the hypermoralism she expressed to us.

In the following fall when this moralism was at its height (verbally) the attitudes expressed in action were just as mixed. Witness the following incident:

> (Nancy has been watching Carleton build a "boat" with planks, boxes and saw-horse.) Charles comes up and knocks Carleton. Carleton shouts, *"Hey!"* and chases Charles off. Nancy watches and laughs, says, *"Now he caught him."* Carleton hits Charles and Charles cries. Nancy laughs, *"Now he cries."* Charles runs to the teacher (this was a teacher of the five-year-old group to which Charles belonged and which played on the same playground with the four-year-olds.) Nancy goes up and says to the teacher, *"First he hit Carleton."* Charles: *"Well, he hit me harder."* The teacher says, *"Well, that's what happens when you hit. Don't hit. Just little people do that."* Nancy: *"We don't hit, we never do, and my father and mother remind me."*

Here again Nancy is the onlooker, applauding aggressiveness on the part of another child even to the extent of laughing when the victim cries; yet with the entrance of the adult she reverts to the same pattern she gave us. (Perhaps she felt, too, that the "little people" was slander to her own group and thus felt a need to rush to her own defense.)

By the following spring her rules seem to be pretty well crystallized, and to accord much better with the attitude she expressed in the experimental situation—not only in what she said, but in the apparent underlying attitudes as well. This was the period at which she told us it was "all right" to hit back, and at which she seemed pretty self-assured in her replies. Now observe what she says and does when an issue really comes up:

(*Marie, Lila and Nancy are playing in the sandbox.*) Marie takes a box that Lila was using. Lila says, "*I need to use it.*" Nancy tries to take it from Marie. Marie holds on saying, "*No, now, now, let's not fight.*" Nancy grins, tries to pull it away, says, "*I'm trying to get that thing away from her.*" Then stops pulling and sits down again. Lila says, "*I just need it for a minute to put something in.*" Nancy says to Marie, "*If we tell you nicely and you don't give it to us, then we have to tell you crossly; and if you don't give it to us then we have to fight, and you wouldn't like that.*" Lila: "*No. I have a . . . and a . . . to hit with.*" Nancy: "*Now don't hit her.*"

Together with the ritual implied above, there enters also a special sort of five-year-old morality which had not appeared in the picture before and was a part of patterns arising throughout the entire group:

(Nancy and Thelma are on see-saw at one end with Nell and Marie at the other end. Dick is standing near by. Thelma and Nancy have for some time been singing "*Marie, Marie, tattle-tale,*" over and over again.) Dick turns to Nancy and says, "*If you call her a tattle-tale, you're one yourself and she isn't.*" Nancy continues to sing, "*Marie, Marie, tattle-tale.*" Dick says, "*You're beginning to be a tattle-tale, too.*" Thelma: "*So are you.*" Nancy: "*Yeah, whatever you say we are, he is too.*" Thelma: "*Yeah.*" Dick: "*I was just telling you something.*" Thelma: "*We were too.*" Nancy: "*I'm not going to argue with Dick.*"

And again we are reminded of the influence of experience in group contacts. "*Whatever you say we are, he is too*" was probably not picked up from parents or teachers, any more than was the more individual sort of social experience in which Nancy learned to applaud aggressiveness on the part of other children.

Thus the attitudes that appeared as Nancy actually faced other children seemed to be in the first two periods a much more direct and frank expression of existing feelings than those expressed to us; in the last period the two were much more nearly similar, both being indulgent to aggressive behavior. But it was in just those periods when her attitudes as expressed to us were superficially most like her parents' that they had least correspondence with attitudes expressed on the playground. Which could be called the true attitude? If we chose those expressed on the playground, then we have either to accord parental attitudes less weight than they have or to assume

that parental attitudes were not what they appeared to be; if we choose those expressed in the experimental situation we have to deny that a child is more likely to express in the immediate situation and under the stress of immediate circumstances what she truly feels than when she is quite far removed from it. It may be that these playground attitudes should more truly be considered simply another aspect of behavior rather than objective judgments and that this is merely the time-lag which is often found between one's behavior and one's attitudes toward behavior; that Nancy was on the playground simply working out in a practical way the problems which finally resulted in her pretty clear-cut response in the spring of 1936, with attitudes by that time well formulated in both situations, and behavior on the playground consistent with both.

If, however, we turn to the idea of the time-lag alone to explain discrepancies between attitude and behavior, there is much in Lila's case which suggests that there are other important factors as well. Lila in the fall of 1935 expressed to us a highly utilitarian attitude toward aggressive behavior and was being only moderately aggressive. As a matter of fact on the playground she seemed on the whole much more condemnatory of aggressive behavior—her own and others'—than in the experimental situation. After a fight in which she was involved she tried to excuse both herself and Nancy to a would-be arbitrator by saying, *"We didn't do it"* and *"Nancy only ran,"* and she accepted the dictum of the arbitrator (another child) that *"You can't do it any more. You can't play hospital again."* This would indicate that she felt and admitted some guilt in the situation. And on another occasion when Grant suggested that they go and *"tear Thelma down,"* a popular sport with him, Lila said, *"We'll pretend she's a friend, will we?"* In regard to another child's behavior, she has pretty aggressive and bloodthirsty ideas as to punishment, and yet it is for aggression that he was to be punished. The following was a conversation that took place in the dressing room when they had just come from the playground:

> Holden to Dick: *"You know how I boxed you down?"*
> Dick: *"Well, my uncle's a doctor and—"*
> Lila: *"When the exterminator comes to my house, I'll tell him and he'll go and get poison."*
> Evan: *"Who?"*
> Lila: *The exterminator. And kill Holden."*

Evan: *"What did Holden do?"*
Lila: *"He boxed Dick over."*
Dick: *"I'm going to get him."*
Evan: *"Call the policeman."*
Dick: *"He won't do anything."*
Lila: *"Say he's a robber to the policeman and that'll do it."*

It is not illogical that the playground behavior, which was relatively non-aggressive as far as her actual behavior was concerned, and condemnatory of aggressiveness in what she said, would crystallize by the following fall into what she told us in the experimental situation: that hitting is not acceptable under any circumstances. Adding this to the fact that her parents might to her have seemed to be withdrawing support on aggressiveness, and that this would probably be her interpretation of teacher attitudes as well (to be discussed later), there seems to be good reason for her having said to us what she did. Yet the attitude expressed to other children at that time was revealed in remarks like the following: (to Nancy) *"Never mind, he's a good fighter. I told him to fight others, but not us."* Her behavior along with this was as highly aggressive. In other words, attitudes accepting aggressiveness preceded rather than followed aggressive behavior from the point of view of time, with, again, what was said on the playground going along with playground behavior rather than with parental attitudes (however construed). If we accept what she said to us as true attitudes, there is still a discrepancy between these and her behavior which cannot be explained by time-lag; if we accept what she said to other children, the degree of her belligerence is such that it must be receiving impetus from more than parental attitudes alone, since they would never have accepted it to this degree according to statements made when they were interviewed. This case brings out a difficulty not mentioned before: How far could we accept parental attitudes for what they appeared to be? Whatever we may say our attitudes are, it is impossible to know whether we are not unconsciously phrasing them for the benefit of the listener, just as children do. And it is quite possible for a parent to say, and believe, that he accepts his child's aggressive behavior when unconsciously he rebels against it. This is mentioned in Lila's case since, though there was no reason to question parental attitudes as expressed to us, there were so many discrepancies and contradictions in what she said and did.

Evan never showed as much consciousness of rules as did either Lila or Nancy, and hence on the playground seldom expressed himself on the subject of his own or other children's behavior. But like Lila and Nancy, both of whom showed at certain periods high aggressiveness in their behavior, he used many dire threats and called in to support him the ultimate power of the law: the police force of the city. And children's ideas about policemen and jails and the punishments to be met thereby are nothing to be taken lightly.

> Charles responds to Evan's apparently innocuous remark to Philomena, *"When you go to sleep I'm going to sleep,"* with: *"If you do, I'll beat your head up."* Evan: *"You will not. I'll tell a policeman. He'll kill you. . . . It's dark in jail. One day I saw a jail."* Beulah: *"Did you go in it?"* Evan: *"I just went to look at it. People were in there."* Beulah: *"All alone?"* Evan: *"No, with my daddy. The children there have nothing to eat."* Charles: *"Then they die."* Evan: *"When they want to make wee-wee, there are no toilets there."* Charles: *"They have to do it on the floor."* All laugh. Charles says something. Evan: *"There are no toys for them, is there?"* Charles: *"They get their hair all dirty."*

The fact that three final and irrevocable symbols of authority—parents, policemen and death—appear so frequently in the threats of aggressive children, and especially that they appear so frequently as punishments for aggressiveness indicates that physical aggressiveness is often to them a "mortal sin." Yet this leaves us uncertain whether or not they are much concerned about such ethical categories. True, threats of this kind are not expected to be carried out and often are proffered as a part of an intellectual combat as much as a struggle for physical superiority. But where aggressiveness is threatened the worst punishments the child can think of are called to the fore. It was in this area that Evan's attitudes were probably influenced to quite a large extent by another little boy in his group. He often sought this boy out for play and when conflicts arose many verbal arguments ensued. But Jerry, the other child, seemed to get as much real fun out of fighting as any child in the group; and when an argument was well begun he often became amused and interested with seeing how far threats could go—so that what might have started as a battle often ended with a twinkle in his eye.

> On one occasion he and Morris (with whom Evan often

made a threesome) had been playing together. Morris went over to Evan, said, *"Take my shovel,"* and tried to snatch Evan's away from him. Evan held on to it and said *"No."* Morris: *"You said I could have it."* Evan: *"Well."* At this point Jerry came up, pulled at Morris and said, *"Don't have a fight. . . . You're a sissy."* Morris: *"I'm not."* Evan: *"Who is?"* Jerry: *"You are."* Evan: *"You liar."* This threw Jerry and Morris together against Evan and both said to him, *"You're a liar."* Evan: *"I'll sock you in your eye."* Morris: *"I'll sock you."* Jerry: *"Ill sock you in two eyes. I'll give you a black eye."* Then, in a purely conversational tone, *"You still can see."* Morris apparently becomes interested in the intellectual side of the question, too, and says, *"How?"* Jerry: *"You can see with a black eye."* Morris: (putting a finger on each temple) *"Not if it's all the way from here to here."* Jerry turns to Evan and says reassuringly, *"Anyway, don't worry, I'll only give you one."* Evan: *"For what?"* Jerry: *"For nothing."*

This attitude that fights and arguments are rather good sport was, of course, not limited to Jerry alone. But Evan, as will be shown later, was himself an intensely serious child, especially where his personal integrity was involved, and he also seemed to have a good deal of respect for Jerry. Hence with Jerry, he was as likely to find fighting as much a matter of sport as rivalry and with him there were various friendly fights. An example was the following:

(Evan watching Morris and Jerry playing with blocks). Jerry says, *"My blocks at home can make bridges."* Evan repents. Jerry: *"But these can't, can they?"* Evan: *"No. . . . I'm a policeman."* Morris: *"Policemen don't have flags."* (Evan is holding a flag). Evan: *"Sometimes they do."* Morris: *"No, they don't have to sail flags out, do they?"* Jerry: *"No."* Jerry approaches Evan and snatches at flag. Evan pulls it back, says, *"No, want me to slap you?"* Morris: *"Want me to slap you?"* Jerry goes at Evan with block. All laugh. Evan moves away. Jerry continues to go at Evan with block. Evan: *"No, don't really, just try to."* He runs around and Jerry chases him.

Thus, Evan, who to us said consistently to the end that hitting was "not nice" but that "you're supposed to hit back" had apparently by the spring of 1936 also developed a working attitude that fighting can be good fun. But again, since this was an attitude that was

learned from other children—probably chiefly from Jerry and certainly never from an adult—it would not be likely to be expressed to an adult. In other words he seemed to have two codes—one for use in front of grown-ups, another for use with his friends. Which was his true attitude? Probably, in this case, a little of both. To a certain degree they were alike in acceptance of hitting and thus should represent no great conflict. The fact that it's "not nice" to do a thing does not necessarily stop a person from doing it, unless the authority that laid down the law was so strict as to bring about real repression or could be always on the spot. In the nursery school, teachers, whether representing themselves or parents, can obviously not be always on the spot, and we know that Evan's father was trying to back up rather than break down physical means of defense on Evan's part.

Holden was the prime example of "getting away with things" in the nursery school. The sheer number of his conflicts shows that he had plenty of opportunity to evade the rules teachers and other adults laid down and put his own morality into practice most of the time. But it is interesting that though group (i.e., child) attitudes toward aggressiveness, and the prevalence of aggressiveness in the group, tended to make Nancy, a non-aggressive child, less rigid in her attitudes and more aggressive in her behavior, they seemed to influence Holden's attitudes in the other direction. Though his aggressiveness was high in the fall of 1935 (he still was one of the smallest in the group and still apparently using his physical prowess to acquire prestige) his attitudes even on the playground (as in the experimental situation) were pretty mixed. It may be that his code includes a differentiation as to size: that it's all right to hit children bigger than you, and not smaller. Note his part in the following discussion in the dressing room just after coming in from the playground:

> Faith says, *"That was a very bad fight. Got my new hat all—, the dirty boys."* Bernard: *"I had a fight, too."* Holden: *"And I, too."* Faith: *"And I, too."* Holden: *"What happened?"* Faith: *"I was playing with a barrel and they pushed me over. I hurt myself and I cried."* Holden: *"Then what?"* Faith: *"I told Miss Price."* Holden: *"Oh, how big were they? This big?"* (holding his hand up in the air). Faith: *"No, this big"* (holding hand up as high as she can reach). Holden goes

over to chair, stands on it and holds his hand in the air: *"This big?"* Faith gets up on chair and holds hand high above her head: *"This big."* Holden: *"Are they down on the playground playing football?* (a group of older boys always followed this group on the playground). Faith: *"No, I'll show you."* Bernard: *"I had a fight, too."* Faith: *"I know. I saw you crying."* Holden: *"And I. I did the same thing as you. I fell on a bucket the same as you."* Faith: *"Yes, right over my head."* Holden: *"How did you get out?"* Faith: *"I pushed it off."* Holden: *"Why did he do it?"* Faith: *"He did it for true."* Holden: *Did he laugh?"* Faith: *"Yes."* Holden: *"Did he think it was funny?"* Faith: *"Yes."* Holden: *"It wasn't. It was bad."*

The influence of group pressure on Holden's attitudes can be seen more directly in an incident in which Holden was offered a definite reward if he promised not to fight.

(Grant, Nancy and Randall are playing together, Holden near). Holden says, *"I'll take all the shovels,"* and lifts two of them. Randall: *"No."* Holden goes over to Grant and starts to take his shovel. Randall: *"No."* He pushes Holden away. Holden: *"Well, I'm going to take these two."* Randall and Grant say something. Holden: *"Just for that, I'm not going to let you play with my truck."* Grant talks about mice in apartment. Holden says: *"Randall can't play with my truck—so."* Randall says to Grant: *"He can't come to your Christmas."* Holden: *"Can I come to your Christmas, Grant?"* Grant: *"I wrote your name."* Nancy: *"Holden can't come, can he?"* Grant: *"Yes."* Randall: *"No, he can't. He fights."* Nancy: *"Can I come?"* Randall: *"Yes, you don't fight."* Grant to Holden: *"And you don't fight, do you?"* Holden does not answer, stands holding shovel. Randall talks about *"won't be any resting—work and read papers."* Randall: *"I got a desk at home."* Holden: *"Well, I got a pen and I can write."* Randall: *"Go away."* Nancy and Grant: *"Go away."* Randall: *"You can't come in here."* Nancy and Grant repeat. Holden fingers shovel. Grant says, *"You look like a little shrimp."* . . . (lull) . . . Grant to Holden: *"When you come to my Christmas are you going to fight Randall?"* Randall to Holden: *"You wouldn't fight me, would you?"* Holden: *"No."* Grant: *"You* (Randall) *said you were going to fight, Randall."* Randall: *"No, I wouldn't fight him* (he whispers to Holden). Grant: *"Evan can't come."* Randall: *"No, 'cause he fights."*

Thus it is interesting in Holden's case (as compared with Nancy's case) that what appeared in the experimental situation seemed to be more a reflection of group pressure on his extreme aggressiveness than of parental influence, for his parents had imposed no specific restrictions. His mother may have appeared in the "not nice" statement but apparently in this case the group exerted parental influence as well.

In this chapter we began by looking at the point of view of a parent of each child toward aggression, and considering this point of view in relation to other aspects of family relationships. We found that Nancy's affection for her father doubtless conditioned her response to his pacifist tendencies; that Lila's sense of the importance of her parents may have accounted for similarities in their view that hitting was sometimes necessary; that Evan's parents had confronted the necessity of developing restraint in Evan's originally aggressive treatment of his little sister; and that Holden's companionship with his older brother and father, with their joint participation in aggressive play was quite as important as the statement that he had no objections to the use of force, but did object to fighting "without knowing what you're doing." We saw that while parental patterns were likely to be closely related to what children said about fighting in the experimental situation, behavior and points of view on the playground differ from both parental viewpoint and from the child's statement of his own viewpoint. Nancy was more aggressive and Lila was more conservative than we should have expected. We also observed that children's statements on the playground reflected the emotional tone of the dramatic life situation where the statements to the experimenter were likely to be more moral. In no case did we find a clear duplication of the parents' viewpoints in the "mores" of the playground; so it appeared that all of the children in varying degrees had mixed attitudes and that their variations in statements and behavior were inevitable results of the necessity for making some adjustment with both home pressures and those of the playground group. In Nancy's case, parental pressure was against the aggression of the group; in Holden's case, group pressure was against the marked aggression brought from home.

SUMMARY

This material on attitudes expressed to other children indicates definitely that the simple fact that the experimenter was an adult had a good deal of influence on the attitudes expressed in the experimental situation through the adult's appearing as a reflection of parent or teacher. It indicates, also, how wide a spread of authority a parent has. To a child every adult is partly a parent and the child seeks his approval just as he seeks the parent's approval by saying what he thinks would be acceptable to the parent. But it indicates, too, that parents work on their own children through other children. Certain group attitudes are definitely parental attitudes and, as in the incident quoted above, the group can be a powerful tool of parental authority. But not always. For in other incidents above, there was discernible a kind of morality which never came from adults at all. It came, apparently, from the child's own experience in dealing with other children and did not seem to require further authority than the acceptance of other children to become well established. When these moralities (parent and group) differed, the resultant attitudes as expressed by the child in both word and deed held many apparent contradictions. Was this simply because rules mean very little to young children, so that they can easily shift judgments from moment to moment and yet be sincere in everything they say? On the contrary, all the evidence seemed to indicate that the child most conscious of rules and most serious about them was as mixed in her responses in different situations as was any other child. It seemed to us that the resolution of the discrepancies lay not in dismissing any conscious and consistent morality on the part of four- and five-year-olds, but in looking for the parts of the picture that would help to explain why apparent discrepancies occurred. In one case (that of Holden) it was stated that one strong influencing factor in the degree of his aggressiveness and his attitude toward aggressiveness lay in the fact that he was one of the youngest and smallest in his group and that he seemed to use aggressiveness as a means of winning prestige. Similarly, in each of the cases we studied, the child's rôle in the group appeared to have a tremendous influence on his behavior toward other children and on his attitudes toward all such behavior. This factor is discussed in the following chapter.

IV. AGGRESSIVE BEHAVIOR AND ATTITUDES IN RELATION TO THE CHILD'S PLACE IN THE GROUP

Since aggressive behavior, and the attitudes toward it, vary so greatly from one child to another, it is permissible to look for the bases of these differences in the individual personality as well as in the general situation. Yet intermediate between "personality" and "group situation" is a further important factor, namely, the way in which the specific personality may function in the specific group, i.e., the rôle imposed or achieved by the individual in relation to the other members of the group. Intensive observation has shown this rôle, or social position, in the group to be extraordinarily significant for our problem—requiring, in fact, a full consideration of the child's characteristic personality pattern as brought out in the group interactions.

It will therefore be necessary for the present to leave the topic of aggression *per se* in order to show how it fits into the larger pattern of the child's social behavior in his nursery school group. Whatever may be the roots of aggressive behavior and whatever may be the form of its expression, it plays a large part in the formation and expression of the child's social relationships. Not only does it influence the attitudes of other children toward him, but as these attitudes develop they in turn form a constellation which may lead to forms of behavior which might not otherwise appear. This is true for the influence of the group as a whole, and for the influence of certain small constellations within the group. It is especially true of very close friendships where rivalry and affection go hand in hand and continually conflict with and reënforce each other. It is equally true at the opposite extreme, where fundamentally satisfying friendships have failed to develop.

In order to obtain some quantitative estimate of the child's place in the group, a count was made, in the case of each of the four children for whom adequate records were available, of the amount of free-play time spent by him at each six-monthly period in social contact with other children. In order to make these scores comparable to each other, and also comparable to the scores on the total 1934-1935 group (8) (worked out in a previous study) they were reduced to percentages. The tabulation of these scores was done in the following way:

1. "Free play" time was taken to include all periods in which the child was free to make his own choice of activity.

2. Since on each record a check had been made at every 30-second interval, this "interval" was taken as the basis of timing. A count was first made of number of 30-second intervals of "free play" time on each child's record.

3. A count was made of the number of the above "intervals" *within or during which social contact occurred.* The child received a tally if he exhibited the behavior in question during all or part of a given 30-second period. "Social contact" was taken to mean a real "interchange" between the child whose record was being taken and one or more children; that is, all coöperative organized play, sharing of material or activity, physical contacts, and conversations. This did not include "onlooker" activity or "parallel" activity unless social contact as defined above had been established previously and neither child had left the scene in the meantime.

4. The child's social contact score in terms of number of 30-second intervals was then divided by the total number of intervals of free play time, and the resultant percentage score on social contacts was used throughout. These scores represent the percentage of his free play time that each child spent in social contact, regardless of what children or how many children he was with (Table 3). Thus if Joan has 100 intervals of free play time, sometimes with one,

TABLE 3

THE SOCIAL CONTACT SCORES OF THE FOUR CHILDREN AT THE THREE DIFFERENT TIME PERIODS AS COMPARED WITH THOSE OF THE TOTAL 1934-35 GROUP IN THE FALL OF 1934 AND SPRING OF 1935

(The values represent percentages, i.e., per cent of total 30-second intervals of observation time within or during which the child was engaged in social contacts with other children.)

	Fall, 1934	Spring, 1935	Fall, 1935	Spring, 1936
Nancy		65	89	95
Lila		71*	89	85
Evan		62	51	73
Holden		53	79	
Group (Av.)†	35	58		
(Range)	06-7	13-84		

*Here the records were too few to consider this figure reliable.

†These figures were based on the total 1934-35 group, of which the four children used here were a part. Percentages given for this group as of fall, 1934, were based on 18 cases, in the following spring, on 16 cases.

sometimes with several children, and makes or maintains contacts in 34 of these intervals, the score is 34 per cent. Several very brief contacts might have the same value as one contact lasting over several 30-second intervals.

TABLE 4

PER CENT OF FREE PLAY TIME SPENT BY EACH OF THE FOUR CHILDREN WITH *EVERY OTHER CHILD* IN THE TOTAL GROUP

("Periods" 1, 2 and 3 represent observations made, respectively, in the Spring of 1935, Fall of 1935, Spring of 1936.)

Names of children in total group	Evan Period			Holden Period			Lila Period			Nancy Period		
	1	2	3	1	2	3	1	2	3	1	2	3
Nancy	8.4	4.5	1.4		7.7		45.8	54.9	66.9			
Lila	3.1	5.5		4.9						15.3	46.1	39.2
Nell		5.2						22.8	22.1	4.9	10.6	42.6
Thelma	3.1	8.4						17.0	4.4			30.2
Alice							2.1			4.9		
Elaine												
Sally							16.6					
Joyce				1.7						3.4		
Mary		1.5										6.5
Carol Ann									1.1			3.2
Faith		3.4			1.2			8.1	2.2		3.7	3.0
Elsie		2.1			2.0			2.1	1.1			7.9
Marie		2.6	5.2						21.8			34.5
Arlene		1.5			25.5				1.9			6.0
Philomena								12.1			4.0	10.7
Evan					12.9			14.0	2.5	3.9		4.2
Bernard		7.6	17.6		34.1			10.5			3.2	8.5
Randall		1.8	10.3		10.6			2.3	2.2		7.2	21.5
Jerry	9.8	7.1	29.9					5.1	4.2	17.3		2.8
Morris	13.9	5.8	12.4	2.9			4.2					
Holden	3.1	6.0	2.9					20.8			1.3	
Dick		5.8	1.2									3.8
Grant	4.8				8.2			28.0	30.8	23.2	51.4	17.6
Denison	4.5			36.1								
Wallis	5.0			9.1			4.2					
Kirk	26.6											
Carter							4.2					
Henry		3.7	1.2									
Ben			14.3									2.0
William		4.7	8.3		28.6				4.4		1.3	2.4
Frank		11.1	16.4		20.6							
Alden											1.0	
Sammy										3.4		
Older *children**	9.5	2.6	3.1	1.7	4.6			17.6	1.1	12.3	24.2	4.2

**"Older children" refers to the children in the four-year-old group in the year 1934-35, and in the five-year-old group in the year 1935-36.

5. Social contact scores were also made out to indicate how much each of the four children played with each of the other children in the group, regardless of how many children might be present at once. These were also reduced to percentage scores as above (Table 4).

A. Beginnings of the Friendship between Nancy and Lila

Proceeding from this quantitative statement, we shall need now to consider each child as an individual in relation to the group, indicating his characteristic group rôle, the sources of his friendly and hostile behavior, and his own attitudes toward such types of behavior. We shall describe in some detail the relationship between Nancy and Lila, as well as the rôle which each of these children played with other members of the group. Other children will be introduced briefly, partly for the interest inherent in their own behavior, but primarily for the sake of the light they throw upon variations in Nancy's and Lila's behavior and attitudes with changes in their group rôles. At the end of the chapter there will be a brief discussion of Holden, in order to show how mere age and size of other group members may affect a child's social behavior and his attitudes toward such behavior.

If one compares Nancy's percentages of time spent in social contact with the average and range for her entire group it will be evident that Nancy was, in terms of this criterion, a highly social child. This was no doubt partly due to the fact that she had been in nursery school for some time and had at the start of the year already known some of the children in this group. But even taking previous nursery school friendships into account, she, during both of these years, stood very high in the amount of time she spent playing with other children. In the 1934-35 study on her group in the fall of that year, she had ranked third among 18 children and also third among the nine who had been previously in nursery school; in the spring of 1935 she ranked highest of 16. The records for this study made in the spring of 1935 were taken somewhat earlier than records made on the entire group for the previous study, which may account for the fact that she does not achieve as high a score in our records as in the records in the other study. (The tendency for all children's scores to increase during the year was noted there.) Increase in age undoubtedly accounts to a large extent for the steady

increase in her scores during the year 1935-1936. Still, to find even a five-year-old child who spends 95 per cent of her time in social contact indicates a very high degree of sociability.

Lila's scores show that she also was a very sociable child. It is interesting, however, that in the spring of 1936 period when Nancy's scores continue to increase, Lila's did not increase, and, in fact, showed a slight decrease. As may be seen in Table 4, each child spends a large share of her time with the other, but in this last period Nancy's interests are somewhat more widespread than are Lila's. She includes more children in her play and for longer periods. The figures are indicative of a change in the relationship between Nancy and Lila at this time: Lila is showing a steadily increasing desire for Nancy's companionship, while Nancy has a wider spread of interest and is not so concentrated on her friendship with Lila. What actually appeared to happen in this case was as follows:

By the fall of 1934, i.e., the fall of the year in which this study was begun, an apparently firm friendship had grown up between these two children. They spent much of their time together (shown in a previous study) and rarely had arguments or disagreements. Both were imaginative, verbally gifted children with similar interests and abilities; they spent many hours in happy, coöperative play. Excerpts from an observation record taken for this previous study are quoted again here to present a picture of them together at this time:

10/17/34

Lila and Nancy playing ball. Lila holds the ball. Nancy takes it, says, *"Hey, wait, I want to . . ."* Lila hugs Nancy. They hug each other, laughing. Both tumble down and laugh. Lila picks up some beads and says, *"Look at those."* Nancy takes them, says,*"Let's find the colors."* She lays them on the ground and counts the colors. Lila says, *"Listen:* (counting the beads) *1-2-3-4-5-6-7-8-9-10-11-12."* Nancy puts the beads around Lila's neck and says, *"You're a baby, aren't you"* . . . Nancy puts dirt on Lila's shoes and laughs. Lila says, *"Get a brush. Here's some."* She puts dirt on her own shoe. Nancy says, *"Now give me the beads."* She takes them, says, *"You be the mother and shine my shoes."* Lila rubs dirt on Nancy's shoes. Both laugh and rub the dirt.

Nancy gets up. Lila says, *"Let's go away, yes"* Nancy walks off. Lila gets the ball. Both go to boards on ladders. Lila

says, *"Here's our house."* Puts ball on board. Ball rolls off board. Lila gets it and returns, says, *"Listen, Nancy, the ball went out the window."* Both laugh. . . . Lila picks up beads, says, *"Let's go to the shoemaker's."* She drops beads. Nancy says, *"Yes."* Both go off. Nancy talks about shoes, then sits down on block and says something. Lila says, *"Shall I clean your shoe?"* Nancy, *"No, I clean yours."* Lila: *"I'll be the shoemaker man."* . . . Lila and Nancy go to the garage. Lila: *"Here's a bed."* She climbs on blocks in packing box. Nancy: *"Here's mine,"* lies on chest. Nancy: *"Morning time!"* She gets up, goes over to Lila and says, *"Good morning, Lila. Want to get up?"* Lila: *"Yes,"* gets up. Nancy goes over to tricycle, gets on, says, *"Daddy's going to work."*

During the observations made for the present study in the following spring, Lila was absent too much of the time to judge very well what was taking place in the relationship at just this period. When records were taken of Nancy's social behavior, Lila was usually absent, and very few records of any kind could be made relating to Lila. A few scattered incidents, however, seem to indicate that at this time the friendship is still very definite. For example, when one is allowed to get up from rest to resume play, the other wants to come along at the same time. In one instance during a rest period, Evan comes over and says to Nancy, *"You can get up."* Lila gets up and says, *"Me too."* Nancy: *"So may Lila Smith because I want her to."* On another occasion Nancy is sent to the nurse to have a sore eye examined, and Lila says to the teacher, *"Then may she play?"* Their ability to coöperate and to find mutually interesting imaginative play also appears to be as outstanding as before. Witness the following play:

(Lila and Nancy are both on handcar, have been having some difficulty with it.) Lila says, *"We'll have to have turns by ourselves 'cause we both can't go."* She gets off, then starts to get on. Nancy: *"No, I'll have my turn and then you."* Lila: *"All right, I'll walk beside. Put your feet on the pedals."* Nancy tries to go, says, *"My feet are too big."* Lila: *"I'll show you."* She gets on: *"Can't move with the pedals—then we push like that"* (with feet). Nancy: *"All right."* Lila gets off, Nancy gets on. Lila: *"Now I leave it on and get on to there, see?"* Nancy pushes with feet, Lila walks beside her. . . . (They have now changed and Lila is on the handcar, Nancy walking beside her.) Nancy says,

"Where's the too-too horn?" Lila: *"Just pretend it's on here."* Nancy: *"Too-too."* Lila: *"No, I'm supposed to do it."* Nancy: *"I must be the policeman."* Lila: *"All right."* Nancy: *"And he has a horn—tooo tooooo."* Lila: *"What does that mean?"* Nancy: *"Stop and go. Toooo Toooo."* Lila: *"What does it mean?"* Nancy: *"Go."* Lila rides. . . . (A few minutes later they exchange rôles.)

Alike as these children seem in their interests and abilities, in their capacity for having a good time, and for enjoying each other and life in general, the most interesting feature of the friendship was that they were in many ways as different in personality as two children can be. This did not appear so much when they were together, but it came out markedly when each child's contacts with the other were compared with contacts with other members of the group.

1. *Lila*

An analysis of a 15-minute record for Lila as early as February 15, 1935, shows clearly personality trends which became still more marked later. This record was taken one day in the playroom, and at its start Lila was sitting at the piano playing while Thelma, a child of about her age, was standing looking on. Just this situation in itself was characteristic.

> Lila was addicted to taking the center of the stage, and, especially with submissive children as Thelma was at that time, fond of giving orders and directing the action. Lila says, *"Let's get a singing book, let's get a story book, shall we?"* (This again is characteristic: what she means is, *"I'm going to get a singing book,"* but she has a habit of making her actions sound as if the other had a choice in the matter, which he seldom had.) Both the children then go to the book shelf. Lila says, *"This one."* Thelma, *"No, this one."* Lila: *"Let's get two. No, let's get three."* (In this she has coöperated by not insisting on her choice alone—that she could coöperate well was already seen in her play with Nancy.)
>
> They both return to the piano, Lila with two books. She sets them on the floor. Thelma sets her book on the music rack (note coöperation again) and Lila sits in the chair. Thelma stands beside her. Lila points to book and says, *"What does that say?"* Thelma, *"I don't know."* Lila says a long string of nonsense syllables, then says, *"Now let's sing it. Say this."*

Lila sings, *"La, la, la," and plays piano.* (Note now how Lila is definitely taking the reins in her hands.) This is continued with both singing, *"La, la, la."* Lila then turns the page and says, *"That says,—'Letterman, letterman, letterman, look at the letterman.' Now shall we sing it?"* She sings and plays, while Thelma stands looking around the room. Lila says, *"Now turn the page."* (This, too, is characteristic. Thelma does not seem to be coöperating adequately and Lila brings her back by commanding her into the activity.) Thelma turns the page. Lila: *"That says, 'Letterman.' Now sing."* Lila sings and plays, then says, *"Now we're going to do a different one."* She turns page, looks closely at words, points to them saying nonsense syllables.

Thelma gets down and looks under the piano. Again Lila brings her back sharply: *"You're not supposed to look in there."* Thelma gets up. Lila plays and sings. She drums very fast and both children laugh. Lila turns the page, says, *"That's just reading, so read that."* Thelma, *"So was the other one."* Lila: *"No, that was singing."* (Thelma was right. There was no music in the book, but this may have been just imaginative play on Lila's part.) Lila says, *"Let's sing."* Lila drums on the piano. Thelma hums, looking around the room. Lila again brings her back: *"You're supposed to look at that,"* pointing to the book. This sort of activity continued for several minutes, Lila right along taking the whip hand. Then Nell comes up and stands on the other side of Lila, sucking her thumb. Lila says, *"Get away, we don't want you. This place isn't for small girls like you. Get away. I'll kick you."* She stands up and kicks at Nell. Nell moves away. (This exclusiveness was somewhat more violent than in most instances, but again it was characteristic of Lila to be exclusive.) Thelma then looks over at a teacher who is wiping up tomato juice from a table and says, *"Lila spilled her tomato juice."* Lila characteristically defends herself with haste and shifts the blame: *"I couldn't help it. It wasn't my fault. It was Miss Curtis's fault. She filled the cup too full."*

Here and throughout the records, Lila's aggressiveness appears in part to be an expression of a need to dominate. Indications that she wanted things pretty much her own way, and wanted to be the center of attention in one way or another, came out in all sorts of situations and in all sorts of ways. An unusual degree of interest in personal appearance was one way in which it showed itself even at this time.

"See my nice pretty smock" she said to the observer one day. *"It has two pockets. Nice and pretty."* Variations on this theme appeared constantly.

Interest in herself and the details of her personal life were frequent, often to the boredom of other children. *"Did you come alone?"* Evan says to her. *"No,"* replied Lila, *"My daddy brought me. My daddy said to my mother, 'If you get up and get Lila ready, I'll take her to school.' My mother said, 'Thank you,' so my daddy brought me. See?"* Evan turns and walks away.

Aggressiveness appears also, in a broad sense, in her tendency to be somewhat officious in her relations with other children, with rather unsatisfactory results.

On one occasion she went to the sandbox and said to the world around her, *"You better not get in this sandbox, 'cause I'm going to have a big cake and use the sand all up."* Wallis, who was near by, simply walked off. Holden came up, and Lila repeated the above to him. He turned and walked off. To the world in general she continued, *"And if you need any sand, tell me and I'll give it to you."* A moment later she said to Sally, who was in the next sandbox, *"If you need any, ask me, 'cause I have sugar and you don't. You have just flour and pancakes and that's no good."* (To this Sally paid no more attention than did the other children.)

She had a habit, too, of getting what she wanted by techniques which appeared a good deal more generous than they actually were. As in the following instance, other children were by no means slow to see just what the situation held for them. A good example is the following: She was sitting on a sled and said to Holden, *"Holden, would you like to pull me on the sled? You may if you like to."* Holden came to the sled and Lila said, *"Pull me this way."* Holden pulled her a short distance. Lila said, *"This way,"* indicating a different direction, but Holden went straight on. He pulled her to a spot of bare ground and said, *"Not pull you?"* Lila: *"Well, turn that way and go down."* Holden, *"No, there."* He dropped the rope of the sled and went away. Lila called after him: *"Holden, I said you could pull me if you like to."* Holden paid no attention.

She was generally quite a restless child, as evidenced by her behavior during rest periods. She would throw herself around, play

with her fingers, giggle and talk with other children, and rest quietly only when she had her thumb in her mouth. The small number of records taken at this period, however, makes generalizations on her behavior worth while only as they point to later developments in behavior. Moreover, material given above obviously shows that the dark side of the picture was not the only side. Her imagination, intelligence, wide interests, and knowledge of social techniques when she was disposed to use them in an appropriate manner attracted other children as much as her bossiness and unusual degree of self-interest irritated them. She could certainly be good fun, whether in rather mature imaginative play as instanced with Nancy above, or in more light-hearted slapstick comedy, as instanced on one occasion by the play with Holden in the snow. They jumped around in it, falling and tumbling about, with much giggling and merriment. But the characteristics which were likely to be socially attractive occurred largely when she was with Nancy; with other children her less attractive qualities came out more often. Thus the whole basis of aggressiveness varies with the kinds of social response encouraged by specific personal relations.

2. *Nancy*

In Nancy's case, however (we still refer to the spring of 1935 period), the same characteristics that appeared in play with Lila appeared in almost all other situations as well. She had an amazing amount of social adaptability, being able not only to engage in rather mature imaginative play, but to adapt to almost any level. Just as Lila enjoyed sliding on the ice with Holden, a younger child, Nancy had fun rolling in the snow with Joyce, also a much younger child. An outstanding instance of her ability to make just the sort of social approach that would win the other child is shown in the following:

> She walks up to Nell, who is sitting on a sled, and takes up the rope. *"You want me to pull you? Huh? Yes? Nell, want me to pull you?"* Nell says nothing, just sits. (Nell was at this time very shy and afraid in her social relationships.) Nancy said: *"I'll pull you,"* and began to pull the sled. Nell then said: *"Oh, it's snowing. We like snow, don't we?"* Nancy: *"Yes. If there's too much snow I'll make a snow man."* She pulls the sled and Nell laughs.

It is interesting to see how easily and gracefully she won Nell's interest and provided a happy few moments for a child who was not at all an accepted member of the group and was having great difficulties socially.

Another helpful characteristic was that without conflict Nancy could restrain her own wants in order to coöperate with another child. For example, Nancy and Ruth one day were on tricycles. Nancy approached Ruth, at which Ruth said, *"No, I come."* Nancy held her tricycle back out of Ruth's way as Ruth went past. Our impression is that most children of her age in a situation like this would at least have had some comment to make about it. There were many other similar occurrences. An instance in which, when asked for her tricycle by another child, she replied, *"I'll give you a turn when I'm through,"* is further evidence of her ability to handle possible difficulties in a mature way. As noted above, she was a non-aggressive child, and in situations which often aroused others to fury she would usually simply state her case in a mild manner. For example, when Holden came up to the see-saw on which Nancy, Lila, and Alice were playing and leaned on the end so that they could not move, Nancy simply said, mildly but firmly, *"We can't go."* Holden immediately stood away.

Another quality which probably attracted other children lay in her ability to go right ahead enjoying herself even when she was entirely alone. An example of her phantasy play when alone was given above—the *"pansies and roses, oh dear father"* incident ;another consisted of pretending she was making a fire in the snow: *"Zut,"* sweeping her arm through the air:

> *"Now the fire is out. I'm going to make some fire. Deeper snow and water."* She picks up a piece of ice: *"I must make some fire."* She rubs and pounds it on the ground: *"There's my fire coming out. Watch out 'cause something will burn you. . . . See, it's burning you. The fire's coming out. I'm going to sit on the engine and see how it is."* She sits backward on her tricycle. *"I must get a match."*—And so on.

It is interesting that this ability to carry on in real imaginative play was not only a direct attraction for other children in their wanting to join, but seemed in general to be a characteristic of those children who made friends readily.

For use in all situations she had a repertoire of little social pat-

terns which, though relatively superficial, managed also to lend a certain charm. *"Thank you," "Good morning,"* and similar patterns occurred frequently in play as well as in general conversation. *"Oh, good morning, thank you very much,"* she says on one occasion when she pretends to be getting out of bed in the morning. It must be admitted that these social patterns made her sound sometimes more like a little old lady than a four-year-old child—but a little old lady with a good deal of charm.

Added to all these qualities was a certain maternal tenderness that showed itself sometimes in anxiety about others' distress. One of the younger children in the group is crying, saying, *"I want to go see Janet."* Nancy says to the teacher, *"What does she want to do?"* Later when the same child cries again, Nancy says, *"What? What?"* This characteristic shows even in imaginative play by herself. She tucks her doll in a carriage, saying, *"You'll get snow on you, it's so cold. . . . Now, darling, it's all right."* She even concerned herself with the discomforts of grown-ups, real and imaginary. On a cold, snowy day she turns to the observer and says, *"You shouldn't be out in such cold snow, you know it?"* And in the phantasy play referred to above, in which she was pretending to make a fire in the snow, she again turned to the observer and said, *"The fire's getting you. Better stay much farther* (away) *near the door."* (This latter incident may have been partly due to a feeling of pressure because of the observer's constant presence near her. It may have been a means of trying to relieve this pressure by getting rid of the observer.) Lila and Nancy were alike, however, in that their sympathies did not carry very far. Neither, on most occasions, showed more than casual concern in others' distress; and at times they could be quite cruel and heartless in plaguing other children almost to the point of desperation. This comes out especially clearly later in their rivalry with a certain other child in the group.

We have, on the whole, painted a very flattering picture of Nancy. She was generous, coöperative, friendly, interesting; had a wide range of interests and abilities and, especially toward her best friends, she showed on occasion a good deal of sweetness and tenderness. Naturally, however, she, like every other child, had her moments of ruthless individualism when her particular desires dominated everything else. On one occasion, for instance, she goes up to some boards where Alice is playing, says, *"I want to go there,"*

and simply pushes Alice out of the way. On another similar occasion Carter pushed Alice off. Alice turned around with a threat to Nancy, who was also playing there, and pushed Nancy. Nancy pushed her back, saying, *"I'll knock you down,"* and chased her across the playground until the teacher stepped in and called a halt. But these were rather rare moments, and Nancy had in fact for some time been known among the teachers as the "model nursery-school child." It was our own view, however, that at this time her "model" behavior was partly due to a certain amount of anxiety; that her mildness and lack of aggressiveness were related, at least in part, to some underlying conflict with regard to aggressive behavior. Her behavior in the experimental situation—the seriousness and intensity of her exposition on parental authority—tended to confirm this feeling.

B. The Lila-Nancy Relationship in the Fall of 1935 Period

The above gives a representative picture of these two children in the Spring of 1935. In the following fall the friendship between them was still very strong, as evidenced by the figures. Lila spent 55 per cent of her time with Nancy, Nancy spent 46 per cent of her time with Lila. (The percentages differ because of different use of total free play time by the two.) In other words, they still showed a great amount of interest in each other. There were other very direct evidences of this. For example, on the day when Nancy was playing ball with a teacher and another child, Lila came up and Nancy said, *"Can Lila play, too?"* In another instance Nancy defended Lila's material by saying, *"It's Lila's"* to a child who was claiming it. They were also quite affectionate and sympathetic toward each other; hugging and kissing each other, though not frequent, was not unknown. When Lila gets into trouble, Nancy sympathizes with her about it. Lila, for example, wants to take her sled upstairs alone when another child insists on helping her. She becomes quite upset about it, and whines, *"I want to."* Nancy says to her in a very sympathetic tone, *"Don't cry about it."* When, in a game, some children jump on Nancy, Lila leaps to Nancy's defense with, *"Don't! Don't!"* They continued to enjoy each other's company in dramatic play, in see-sawing together, and in other similar activities. Their little social patterns were as much in evidence as ever. Who could have guessed the age of the two children in the following incident?

Nancy and Lila are in the bathroom, washing their hands. Lila says, *"Nancy, could you reach up and get a towel?"* Nancy, *"Yes, I could."* Lila: *"Thank you."* Nancy gets towels and passes them around.

When they were together, their attitudes toward other children were varying. In one case they tried to help out a child who was at this time so extremely shy that she was very unhappy.

One of the teachers had started playing ball with her (Elsie), and Nancy and Lila had joined them. Elsie got the ball and walked toward them, holding it in her arms. Nancy said, *"You get farther away"* (in order to throw it). Elsie: *"I don't want to."* Nancy looked at her, said, *"Let's play."* Elsie hid her face in her shoulder, moved back. Nancy turned to Lila and said, *"She doesn't play."* Elsie put the ball down and moved farther away. Nancy and Lila picked up the ball and began to play. Lila said, *"Now you throw it to that little girl."* Nancy threw the ball to Elsie. (Elsie watched, but made no move and they continued with their play.) In another case, however, they quite definitely excluded a third child. Nancy and Lila were playing together at one of the tables in the playroom with a set of colored tiles. Evan came over and said, *"You know what kind goes here—square ones like these,"* putting some in. Lila: *"Listen, we want to do it ourselves."* Nancy: *"We can do it our own way."* Evan watched for a moment, then went away.

One gets the impression, however, that the personality differences between the two children have become at this time even more marked than before. Lila's individualism appears more, even with Nancy, while Nancy tends to be more and more polite with Lila. For example, Nancy see Lila making snowballs, comes up and watches her.

Lila says, *"Look, I made a snowball."* Nancy: *"Make one for me, please, 'cause I can't do it."* Lila: *"It's ice."* Nancy: *"Can I have a piece, too?"* Lila: *"I just rolled it up. You can do that."* Nancy says something. Lila: *"Shall I make one?"* Nancy: *"Yes."* Lila picks up snow. Nancy says, *"Do you mind if I take the snow 'cause I have to have it?"* Lila gives Nancy ball of snow. Nancy: *"Thank you. Do you mind if I take the snow 'cause I'm going to have a big pile?"*—And so on.

With Nancy, Lila seems to be more dominating, and more often

directly leads Nancy. She even succeeds in leading rule-conscious, law-abiding Nancy into deviltry. On one occasion when they are supposed to be playing outdoors, Nancy and Lila sneak inside and crouch on the stairs, giggling and keeping an eye out for the teacher. When the teacher comes in after them they hide. She spots them, tells them to go out and goes out herself. They simply sneak into another hiding place, Lila leading Nancy on with: *"This is a safe place. Nobody will see us."* This goes on for almost 10 minutes before they are finally compelled to give up.

It is difficult, however, to give a clear picture of the full relationship between Lila and Nancy, since by this time so many other elements were entering into the situation. One of these was a fast-growing friendship between Nancy and a little boy in the group, Grant. This was a very interesting relationship, but a difficult one to analyze. Grant gave every evidence of being a very insecure, timid, anxious, socially inept child, though he was one of the oldest members of the group and had entered nursery school a year earlier. As shown by the figures, this friendship had begun in the previous year. In the spring of that year, according to our records, 23 per cent of Nancy's time was spent with Grant. (During part of this period Lila was absent, which explains why the figures give a higher percentage of time spent with Grant than with Lila.) By the fall of 1935, this percentage had risen to 51: in other words, Nancy was now spending more of her time with Grant than with Lila.

C. The Nancy-Grant Relationship

The relationship between Nancy and Grant seemed on the whole to be a mutually dependent one. Grant, for his part, seemed to be a rather timid, helpless child who leaned on Nancy as a child leans on his mother. When he had a problem to face, he was apt to be completely helpless with it and could depend on Nancy to help him out. Nancy certainly, for a time at least, seemed to be the center of his universe. Whatever Nancy did was perfect. As a part of the routine, overalls and play suits were always taken off when the children came indoors after the free play period. When Nancy, for some reason, did not take hers off, then Grant's stayed on, too. Even when told by the teacher that they should be taken off, he says, *"No, 'cause Nancy has hers on."* When they played games with a group, he always wanted Nancy to be given the chief rôle; for

example, *"I want Nancy to be the gingerbread man."* Nancy, in her turn, watched over him and took care of him. When she sees an older child threatening to run into him with his tricycle, she tries to shove Grant back out of harm's way.

> When he wants some material and doesn't know how to get it for himself, she gives him hers: Grant says to Nancy and Lila, who are in the sandbox, *"I need a shovel."* Lila: *"Take the big shovel."* Grant: *"No."* Lila: *"Then you'll have to wait."* Grant: *"Please. I need a shovel."* Nancy says, *"I'll find you one."* She goes to toy-box, brings back a pail: *"Here, use this."* Grant: *"No."* Nancy then gives Grant her shovel and uses the pail herself. Like all mothers, she had occasionally to discipline him. One day she had a piece of paper in her hand. She tore a little piece off and gave it to Grant, then tore off more pieces and gave them to him. She then gave Lila a piece. Lila said, *"Which gets the biggest?"* Grant: *"I do, 'cause I'm five."* Nancy gives Grant another small piece. Grant: *"Give me this piece* (the biggest Nancy has), *'cause I'm five."* Nancy: *"You have lots of pieces."* Grant: *"I want the biggest piece 'cause I'm five."* He snatches at Nancy's. Nancy pulls back, puts a small piece in his lap. Grant then throws all his pieces in the sand, to which Nancy simply comments, *"Then you can't have any."*—But immediately picks up the pieces he dropped and returns them to him.

If this had been purely a one-sided relationship, it is doubtful if it would have lasted and would have become as strong as it did. But Nancy probably enjoyed mothering him, and definitely seemed to miss him when he was not around. When she was told to go for rest, she would say, *"I want Grant to come."* When he was absent from school for a few days, she would look forward to his return: *"Grant is coming back to school today."* Even when the greatest strains possible were put on Nancy's affection for him she continued to stick to him. He had very few activity interests, and did everything that a child could have done to dampen Nancy's enthusiasm without providing any good substitutes. The following succession of incidents was characteristic.

> Grant and Nancy are wandering around the playground. Grant says: *"Let's think."* (What shall we do.) Nancy: *"I know, let's play ball."* Grant: *"That's no fun."* Both stand looking around. Grant: *"Let's think."* Nancy: *"I know, let's play house."* Grant: *"No, that's no fun either."*

Nancy and Grant are wandering around. Nancy goes toward jungle gym. Grant says, *"Let's not play on the jungle gym."* They both sit down on ledge by fence. They watch other children and talk about them. Then Nancy gets up. Grant says, *"No, let's not go now, let's think what we'll do."* Nancy sits down again.

Grant says to Nancy: *"What do you want to play?"* Nancy: *"On the see-saw."* Grant: *"No, I don't want to play on the see-saw. What do you want to play then?"* Nancy: *"I don't know."* They both sit looking around.

Grant says, *"I know what."* Nancy: *"What?"* No answer. A moment later Grant says, *"I know what."* Nancy: *"What?"* No answer. Nancy: *"What, Grant?"* No answer. Nancy: *"I know, let's play store."* Grant consents and they go off.

After another similar incident, Nancy quite naturally grew fairly impatient with Grant's *"Let's think,"* and said, *"You think a little bit. I told you one, so now you tell me one until we decide."* Naturally, however, it was some time before any decision was reached.

How is it that a friendship could have survived such onslaughts as the above? The only way that it could have survived was in its having a more deep-seated value than has been shown so far. The very fact that in the above incidents Nancy did not simply walk away and leave Grant in the lurch, so to speak, showed that she was a child who was rather easily led and probably found some security in being led. And the main way in which she was being led by Grant was in providing a new form of activity in her life, which, since the age of about two, she had not dared undertake alone. It was to her, judging from the excitement and glee that always appeared with it, a glorious adventure—that of being aggressive with malice aforethought. It was shown above how seldom she was ever aggressive without backing. She also showed real timidity in many different situations. When a child lifted up his hand with a threatening gesture, she shrank back fearfully. When two boys teased her by poking shovels at her, she again shrank back with no effort at resistance. As they poked at her they joyfully chanted, *"Kill, kill, kill,"* to which Nancy responded by turning to Grant with an anxious, *"They really don't mean killing, do they?"* Timidity showed even in situations involving physical activity. Though she could climb with ease, any shakiness of apparatus or any activity in which precise balance was needed, seemed to frighten her away.

In playing on a board, it suddenly snapped up; she looked startled and retreated from it. Even seeing another child in a precarious situation brought the same reaction; a child who was standing on the see-saw next to her almost fell, and Nancy gave a decided start though the child involved showed no fear at all.

Now the fascinating thing about the relationship between Nancy and Grant, considering what happened later, was that Grant was just as timid as Nancy. It does not seem too far-fetched to assume that a highly aggressive child who attacked other children with hammer and tongs would probably have frightened Nancy away rather than led her on when it came to aggressive play. But Grant was as timid in his aggressiveness as was she. He simply was more experimental. For one thing, when with someone with whom he felt perfectly secure—that is, with Nancy—he takes to play at aggression. He inaugurates a "bang-bang" game with her, consisting of swishing his arms and feet about and saying, *"Bang bang."* To this Nancy reacts first with her characteristic timidity. When he kicks out toward her, she withdraws from him. He kicks out again. (There is no danger of his actually hitting her.) Nancy withdraws and shields her face with her arm. Grant says, *"Why do you put your head so far away? I'm not doing anything to you."* Apparently this reassurance was all that was needed, for Nancy then began "bang-banging" with him. Soon the "bang-bang" game becomes a twosome with both enjoying it, and it appears over and over in their play. Later this develops into still more frank fighting play. One day when they are taking their coats off in the dressing-room, Grant says, *"I'll hit you,"* and Nancy repeats. They then both slash their coats at each other, laughing. When a third child comes in, they do the same to her but are stopped by a teacher.

When this aggressiveness is turned onto other children, however, it follows just the pattern that one might expect. Grant, with his experimental attitude, leads Nancy into attacking other children but, since he is timid, he uses timid techniques: poking, shoving slightly, etc. Nancy, being equally timid, and also new to the game, starts out with equally hesitant means of attack. The following instance was typical of the kind of aggressiveness into which she was led at this time.

> Grant says to Nancy: *"Let's tear someone down."* Nancy: *"Yes."* Grant: *"There she is with the hat on."* They both

run off and Nell follows them. They run up to a group of children including Thelma. Grant says, *"Here they are."* All three begin to shove and push Thelma, Nell doing it the hardest, and Nancy doing more threatening than actual pushing. For a moment they stand back and look at her. Grant then whets them on with, *"Tear her coat down."* Again they stand and look. Nell then pushes her. Nancy and Grant watch, then approach and both give her a little shove. Grant says, *"She can't fight very well."* Thelma, who up to this time had simply tried to hold them off, with no counter-attack, begins to cry and hits back at Nell, then hits Nancy. Nancy laughs: *"She fighted me just a moment ago."* Thelma cries and hits out at her. At this point the teacher intervenes. Even when they are on the warpath they will retreat and even hide behind each other when danger threatens them. For example, when they were on their way to the battle cited above, Evan approached them holding a skate and said, *"I'll punch you with the skate,"* to which Grant replied, *"No, punch Nancy,"* at the same time turning to the observer and clinging to her. Evan turned to Nancy and said, *"I'll punch you, Nancy."* Nancy said, *"No."* As Nell approached, Grant said, *"Punch Nell."* Evan just grinned and walked away.

Naturally, it is not likely that overnight Nancy would become an aggressive child. Though she obviously seems to find this aggressiveness fun, she still very definitely refrains from physically hurting another child, and usually finds that a few moments of it are enough. *"Tearing Thelma down"* became for Grant pretty much of a fixed idea for a time. Whenever he got into one of his *"Let's think"* moods his thoughts usually turned to either this or the "bang-bang" game, with the latter often merging into the former.

Here they are again, but note how quickly Nancy loses real interest. They are both running around, clawing at the air and roaring. They approach Thelma, and do this at her. Thelma smiles. Grant says, *"We have sharp, haven't we?"* Thelma looks at them. They both claw and roar. Grant picks at Thelma's knee and Nancy picks at her shoe. Grant says, *"Now do like this."* They both wave their arms around. Nancy picks at Thelma's knee. Grant says, *"Minnie Mouse!"* Both run off to fence and sit there. Nancy says something about *"eat her."* Grant: *"No, better wait, 'cause she's wiggling a lot. Shall we tear her down a little more?"* Nancy: *"No."* Nor

does her timidity vanish overnight. She now enjoys making threats, but she does not carry them out. For example, she and Grant together go up to an older boy who is holding a ball, and say, *"I'll knock that ball out of your hand—wow!"* —then they scamper back to the sandbox.

D. Influence of the Nancy-Grant Relationship Upon the Nancy-Lila Relationship

How does this interdependence of Nancy and Grant affect the friendship between Nancy and Lila? Grant is definitely more interested in Nancy than in Lila and yet, as shown by the figures, Lila is much with Nancy. The only alternatives for Lila in her attitude toward Grant are acceptance, rejection, or conflict. At this period there is no feeling that Lila is afraid of her standing with Nancy. She appears to feel reasonably secure in Nancy's affections. For a time, anyway, this situation therefore becomes a real threesome. Note the triangular affection in the following incident: Lila and Nancy are playing together, when Grant comes up and chats with them. Nancy turns to Lila and hugs her, saying, *"Sweetie."* Grant hugs them both together, repeating, *"Sweetie,"* then Nancy kisses Grant and they all hug each other. Note also how Lila accepts Grant as against another child in her play with Nancy. Lila and Nancy are see-sawing, with Phyllis, one of the older girls, and Grant standing near. Lila says to Phyllis: *"We don't want to be pushed. We can push ourselves. But Grant may push."* Grant then pushes the see-saw.

Undoubtedly in this relationship both Grant and Lila are pivoting about Nancy, and Nancy with complete impartiality seems merely by the steadiness of her affection for both to hold the situation together. When possible clashes arrive she deals herself out in equal portions.

> Grant, Lila, and Nancy are all together in the sandbox. Grant says, *"Nancy, do you want to go home with me?"* Nancy: *"I go home with Lila."* Grant: *"When will you have time to come to my house?"* Nancy says something unintelligible. Grant: *"I want two days. You could go to Lila's tomorrow."* Lila: *"No, my mother planned it and we don't want to spoil her plans."* Nancy: *"Then tomorrow I'd be free and could go with you, Grant."*

In spite of the apparent rosiness of the situation, however, the last incident along with others of its kind lent the feeling that conflict was bound to arrive sooner or later. We may even suspect a minor sort of death wish for Lila on the part of Grant. One day when she is absent and Nancy says, *"I wonder where Lila is,"* Grant replies, *"Perhaps she has a cold—or whooping cough. Because whooping coughs last longer than colds."* It is possible, however, that this situation was also being held together for a time by the fact that though Nancy really ruled the situation by being the pivotal child in it, Lila could temporarily rule it by commands and suggestions. By being a more openly forceful child she could get the others to follow her. Lila suggests that they all play in the sandbox, to which Grant characteristically answers, *"No."* But when Lila acts as if she did not hear him, goes to the toy-box, selects her toys and takes them to the sandbox, Grant and Nancy follow right after her like puppies.

E. The Lila-Nancy-Grant Relationship as Affected by Nell

When affections are as strong as these were it might be imagined that Grant would have provided more competition in this situation since, as shown above, the tie between him and Nancy had become a rather strong one. Part of the reason why he did not was because still another very important force was entering into the situation to hold Lila and Nancy together. With the increasing interest in, and confidence in, overt aggressiveness on Nancy's part, and with developing rivalries and gangs throughout the group there was also the gangster spirit to hold Lila and Nancy together, especially in one particular situation: Lila and Nancy vs. another girl of about their age, Nell. This "ganging up" against another child was often as much for sport as with any real aggressive feeling behind it, but it tended to develop strong loyalties.

This was the way the rivalry developed: Nell had entered this group in the fall of 1934 when Lila and Nancy were already "old" girls. Nell had had a very difficult time adjusting socially, and had not been accepted by the other children. Most of the time she had been very shy and quiet. When she did come out of it, it was usually to fight with another child with a persistency and doggedness that did not appeal to other children. In the fall of 1935, however, she appeared to be a much more normal child, and only then

was making definite efforts to win friends. Obviously, her techniques were not always of the best, and she chose a difficult situation to break into: the friendship between Lila and Nancy.

The relationship between her and these two girls now (in the fall of 1935) tends to follow a regular pattern. The three of them may get along well together for a few moments, but almost inevitably some minor conflict arises (often provoked by Nell, who was a tease and always watching her interests), Lila picks up on it to taunt Nell, and the three of them are soon into it hammer and tongs. The following was a typical example:

> Nancy was busy for a short time, during which Nell and Lila played together on the see-saw. Lila then left and Nell and Nancy see-sawed. Lila came back and asked to join them. Nancy: *"I'll move up here."* She moves forward, Lila says, *"O.K.,"* and gets on behind Nancy. They hold Nell up and bounce her. Lila says: *"Nancy, you get further up."* Nancy moves forward. Lila: *"Let's take turns getting at the end and we'll get off each time."* Nancy: *"How can you? I'll get on Nell's end, and you here, and then—."* Lila: *"No."* Nell gets off her end, and Nancy immediately gets on it. The teacher comes up, speaks to them about going in soon, and goes off. Nell follows her, then returns. Lila: *"No, Nell, you can't get on."* Nell: *"I want to."* Lila: *"No, you're too heavy."* She and Nancy see-saw. Nell stands against the see-saw, Lila says, *"Nell, don't touch it, you might hurt yourself."* Nell pushes Lila in the face. Lila: *"Don't!"* Nell: *"I'll get a policeman and put you in jail."* Lila repeats this, and both continue to threaten each other about policemen and jail. Nell: *"I'll get a gun and shoot you."* (Nancy is all the time simply watching.) Nell: *"I'll get some guns."* Lila laughs: *"Yes, do. Just pretend."* Nancy says something unintelligible. Nell goes over and pushes Nancy's arm. Nancy: *"Stop."* Lila: *"Smack her."* Nell goes over and hits Lila. Lila starts to cry. Nancy: *"Don't cry, Lila."* Lila cries and yells for the teacher. Randall says from nearby, *"I'll give her a whack."* Lila: *"Yes, give her a good whack."* She laughs. Randall chases Nell around. Nancy laughs, *"Give her a good whack."* Randall and Nell run back. Randall picks up a broom and chases Nell around, threatening her with it. Nancy and Lila laugh. Nell runs indoors, and Randall comes over and pushes see-saw while Nancy and Lila sit on it. Nell then calls from an upstairs window, *"Now you can't slap me. I'm upstairs."*

Randall, Nancy, and Lila look up, *"Where is she?"* Lila calls, *"Then we'll get up there and whack you."* Nancy repeats. They continue to see-saw. Nell again comes outdoors and approaches them. Lila says, *"Whack Nell."* Nancy and Lila bounce on see-saw and laugh, *"Give her a whack."* Lila: *"I'm going to get Randall to give her a whack."* Nell runs indoors and Lila and Nancy follow. They go upstairs, in the schoolroom, and look around for her. They find her in the dressing-room, laugh and say, *"Give her a whack—we'll find Randall to do it."* At this point the teacher sends them away.

These conflicts almost always begin between Nell and Lila. Nancy, true to form, is generally more pacifistic, more apt to accept Nell into her play (just as she accepts everyone) but as the battle waxes, just as in the incident above, she gradually slides into it, enjoying it and taking more and more of a part. As in the aggressive incidents shown under Grant's leadership, she actually does little of an active aggressive nature, but finds it apparently more fuel to the excitement of developing aggression. In another incident in rather a different situation note how the same patterns recur, though with certain variations.

Nancy and Lila are at the table in the playroom, playing with the colored tiles. Nell comes up and says, *"Can I help you play?"* Lila: *"No, we want to do it ourselves."* Nell: *"I know it."* She touches tiles. Lila: *"Well, I don't want you to play."* Nell upsets Lila's tiles. Lila: *"You bad girl!"* She hits Nell. Nell hits Lila. Lila hits Nell again. Nancy sits up as if to hit Nell, but doesn't. Nell gives Lila a hard whack on the head. Nancy puts her hand on Lila's head where she was hit. Lila cries and calls for the teacher. The teacher comes over and speaks to them. Nancy says, *"She shouldn't have mussed it up."* The teacher goes off. Nell: *"I want to play."* Lila: *"No, you can't."* Nell: *"Then you can't come to see me."* Lila: *"Well, I'll come anyway."* Nell: *"I'll put you in jail."* Lila: *"You don't know where the jail is, anyway."* Nell: *"I'll tell the policeman and he'll put you in jail."* Lila then gets the teacher to intercede. It is finally settled by Nancy with: *"Lila, would you like to play with me six days and I with you six days and with Nell six days?"* Lila responds: *"Longer than that because we* (Nancy and Lila) *are twins."*

(We suspect that Nancy's peacefulness in this case was due to the proximity of the teacher—she was a very law-abiding child.)

With added time, Nancy takes more and more of an aggressive part. In one instance she even tries to start the fight.

> When Nell approaches them, Nancy says, *"Nell can't have any* (turn on the sled), *can she?"* In another, though at the start she tries to protect Nell, as the excitement rises she really attacks her physically. Grant, Holden, Nancy, Lila, and Nell had been playing "doctor," with Nell the patient, prostrate on the ground. Grant kneels on top of Nell and says, *"I'm keeping her down."* Lila: *"You lie here and do it."* Nell calls, *"You're hurting me."* Nancy says, *"No, don't do it."* Grant gets off. Holden gets on top of Nell and shouts, *"Nell, Nell!"* (trying to get her attention). Nell does not answer. Nancy says, *"I'll give her—"* and goes up and pokes her. They all shout, *"Nell, Nell, Nell, Nell!"* Nell does not answer. Nancy pokes her again, then shakes her hard, then gets board and pokes her with it. Lila hits Nell. Nell gets up and starts to run off. Holden, Nancy and Grant chase her, Lila running behind. They all pull her down and get on top of her. Holden says, *"Let's lasso her."* Nell gets away and runs to the teacher.

These last two incidents followed all of those quoted previously by more than a month, showing the developments which took place with time. We have picked out only a few as examples. There were many similar to them. As the rôle of each child in the group develops there are new incentives to aggression and new outlets for its expression.

No relationship, however, is a simple one with a single direction, and the stronger the feelings the more likely is this to be true. Nell, in spite of her social ineptness and her enjoyment of teasing and annoying others was a pretty good sport and Lila and Nancy both seemed to like her. Sometimes one, sometimes the other, would stand up for her against the third, bringing the three of them into line. On one occasion, when Nancy and Lila were again see-sawing and Nell was putting her hand on the see-saw, Nancy said, *"Watch out for your fingers."* Lila replied, *"She's just touching the end. That's all right."* (This "Watch out" or "You might get hurt" usually meant "Get away." See other similar incident above.) The same thing occurred in another situation in a more obvious way. The three children were in the dressing-room removing their wraps. Nell said, *"Look, isn't this a pretty dress?"* *"Oh!"* said Nancy, in a tone which definitely seemed to mean, *"How horrible!"* Lila,

however, said, *"Yes, I think it's nice,"* and Nancy's attitude changed completely: *"A pretty belt,"* she said, *"and buttons, too."* Lila: *"I like the buttons best."* One instance was even noted in which Nancy and Nell together reproved Lila. This was in the wash-room. Lila said: *"I washed my face."* Nancy: *"You shouldn't,"* meaning *"This isn't the time for that."* Nell repeated, *"You shouldn't."* Lila: *"It doesn't matter."* Nancy then, as usual, swung around: *"It doesn't matter."* But Nell persisted; *"You shouldn't."* Lila stamped her foot: *"It doesn't matter."* The ease and unconcern with which Nancy could swing back and forth in her stand was probably one reason why she never got quite so deeply involved in such rivalries as did Lila.

That in this triangle, too, as well as in the Nancy-Lila-Grant situation, Nancy and not Lila was the pivot is shown by the fact that on an occasion when Grant and Nell were together and Lila approached them with, *"Who wants to play jumping rope?"* they both simply looked at her and walked away.

F. Outcome of These Relationships in the Succeeding Period

By the spring of 1936 much of interest for the aggressive side of the picture had taken place in Nancy's and Lila's relationships. According to the figures, Lila now spends 67 per cent of her time with Nancy, a very much larger amount than with any other child; while Nancy spends 39 per cent of her time with Lila (the total social play time varying from child to child); and large slices of it also with several other children, the highest being with Nell—43 per cent.

This last figure is interesting. It means that, though the patterns of rivalry with her still flourish, the rivalry includes as much affection as real hostility. It is now a matter of tradition and five-year-old ethics more than aggressiveness. Frequently now the play with Nell, though always involving flare-ups, is also very amicable, and for longer periods. Nell even on occasion joins Lila and Nancy in rivalry against others. But both Lila and Nancy have extremely high scores on amount of time spent with other children at this period, Nancy's having shown a steady increase to 95 per cent, but Lila's having decreased slightly from 89 per cent to 85 per cent. Nancy is no longer so exclusively Lila's bosom companion as she

was during 1934-35. In the fall, her area of real friendships had already begun to spread. Now it has spread even more widely. Furthermore, certain personality changes seemed to have taken place, all in the direction of greater security and self-confidence and in the strengthening of patterns which were already attractive to other children. The period of insecurity as evidenced by her timidity in certain situations (see above) and by her being led into inactivity by a child like Grant now seems pretty well over. When conflict situations arise, instead of fleeing from them, she now handles them calmly and firmly, and yet at the same time in a way that does not seem to irritate other children. On one occasion she joined a group on the jungle gym, only to be greeted with: *"You can't play, Nancy. Can she play?"* (This was one of the boys with whom she had little contact.) Evan, however, stood up for her with, *"Yes, she can."* This precipitated an argument between the two boys—to which Nancy paid no attention whatsoever. She stayed on the jungle gym until she felt like going somewhere else, and that was all there was to it.

In a conflict with Lila she was even more casual. Nancy was carrying a barrel over to the toy house, when Lila said, *"Give it to me,"* and tried to pull it out of her hands. Nancy hung on, while Lila kept on pulling, saying, *"Just a minute, just a minute, I want to show you"* (how to get it to the toy house). Nancy still held on and Lila pulled vigorously until she finally pulled it out of Nancy's hands. Nancy said nothing, simply watched her. Lila put it on the ground and kicked it, trying to make it roll along. (It was obviously not very successful.) *"What a funny way,"* said Nancy, in a mildly disapproving tone. She picked it up again and went on her way. When she wanted to get something that someone else was using, she was persistent and did not give up till she had it—but first she always made sure of the rights in the matter and then used the most peaceable possible means under the circumstances. In one situation it seemed to her that another child, Arlene, was hogging too many of the sand toys. Nancy's first method of attack was to point this out to Arlene: *"You have too many things."* When this produced nothing more helpful than *"No, I haven't,"* Nancy stepped back for a few moments and seemed to survey the situation. Finally she went to the teacher and calmly stated her case: *"I told Arlene she has too many things."* With the teacher, she returns to

the scene of action: *"You got this, and this, and this,"* etc., . . . *"You better share some."* With the teacher watching, Arlene gives in and hands over some of her toys. It is interesting that even when Nancy used a not-too-popular technique—telling the teacher—she never seemed to arouse the animosity of other children. Probably because she was almost always right.

But it was not only in conflict situations that a greater degree of relaxation and security appeared. In all situations, she was no longer so intensely serious and in many ways showed an increasing sense of humor. Jokes, giggling, mild fibbing (with evident pleasure) cropped up more and more. They seemed to supplant a strange confusion of fact and phantasy, of, it seems to us, anxiety and conflict, which had previously frequently appeared upon occasion in her conversation. Unfortunately, her "story" phantasies were usually so confused and delivered with such speed that it was hard to obtain a verbatim record. One of the best was about *"a bee in our bathroom."* This followed a discussion between Charles and Lila as to whether fairies were real. Lila said they were, Charles said they weren't. Lila insisted they were, because *"I see them under toadstools."* Charles capitulated on this: *"Under toadstools, yes, you're right. Also they live in trees."* This started Nancy on her story, much of which could not be followed. The essence of it seemed to be that:

> I saw a bee in our bathroom today. Father didn't know how to get it away. He got a paper and finally caught it and threw it in the toilet. It came up, and then it came up again, and Father got it and threw it out the window. . . . Then it came back up from the cellar. . . . So Father came to the park with it, and it still came back and came back all the time. . . . Then I wet my hands and Father didn't know it, but it still came and he didn't know what to do."

Now Nancy's departures from reality are much more normally childlike. She tells the teacher she has had her tomato juice when she hasn't, grinning when Grant shows her up; and apparently enjoys turning to good use the fact that the teachers have always tended to believe what she said (after all, she was "the model nursery school child"). She now likes ribald jokes in which she never indulged before. Lila starts with, *"I wet my bed last night, ha ha,"* and Nancy tries to go her one better with, *"I wet my panties*

last night, ha ha." (We wonder, though, whether this is not partly age development. Bathroom activities did not seem to strike any of the children in this group as particularly funny until they got along toward their fifth birthdays.) In many ways, however, Nancy shows a much greater capacity for light-hearted fun than she did before. *"Cannot—can so, cannot—can so; I did—you didn't, I did—you didn't";* motifs such as these, accompanied by much laughter were more in evidence. Her play, as will be shown in some incidents later, had an air of gaiety about it the majority of the time now as compared with the earlier seriousness of her demeanor.

Her standards for her own behavior, up to this time fairly rigid as compared with most children, have also shown a decided slackening. On one day, she spends 15 to 20 minutes rubbing dirt on her hands and gloves: *"Look at my hands, hot diggety, aren't they terrible?"* and with great pleasure proceeds to make them more *"filthy"* (her term). This was continued in the face of all the strongest possible admonitions. Evan says: *"Better not tell your mother or she'll spank you in the nose."* Marie tells her: *"My mother might scold me."* Nancy herself says, *"My father will scold me. You know why? 'Cause my father likes things clean."* This latter was true, and Nancy had always before seemed to "like things clean," too. But even with this self-reminder, she went right on getting dirtier and dirtier, with apparently no qualms. Another evidence of this slackening of standards was mentioned above—her fibbing. This, too, seemed a highly pleasurable activity.

She still has many interests and enjoys many kinds of play. The diversity of these can be seen in the various incidents quoted above; to this is added increasing verbal interests. She loves now to hold real "discussions" with other children. One of these was with Dick on the subject of their future careers. It starts with their crouching on the see-saw and Dick's sitting up again to remark:

> *"It's not good for you. Too much blood gets in your head."* Nancy: *"Yes, too much blood gets in your head. Dick's telling the truth by saying that, aren't you?"* Dick: *"Are you going to be a nurse when you grow up?"* Nancy: *"A nurse or a doctor."* Thelma (on the see-saw with them): *"You can't be a doctor."* Nancy: *"Yes, there's such a thing as a lady doctor."* Dick: *"Yes, I think I'm going to be a doctor."* Nancy: *"I could be a dancer or a singer. I could be a singer."* Thelma: *"A singer sings."* Nancy: *"A dancer has to—. I'd be*

sick." . . . Dick says something about getting married. Nancy: *"I've got a time to wait, too many."* Dick: *"In about six more years you'll be—let's see."* Nancy: *"Five."* Dick tries to count up. Nancy: *"When I'm ten, it'll be five years."* Dick: *"In ten years you'll be fifteen, in five, ten."* Thelma: *"Yes, and the same with me 'cause I'm five."* Dick: *"And when you're ten and ten more you'll be twenty. When you're thirty-nine or thirty-eight like my father."* Nancy: *"Thirty-eight years from when I'll be ten, I'll be an old lady!"* Dick: *"When you're fifty-two."* Nancy: *"Wow, and a million years after that I'll die."*

She continues to have the attractive social patterns of an adult ("excuse me," "thank you just the same"), but now finds them a little boring at times. One day when playing in the sandbox with Thelma and Marie, Thelma gives Nancy some dirt.

Nancy says, *"Thank you, Thelma. Now Marie, that's enough."* She gives Marie some pebbles. Marie: *"Thank you, Nancy."* Thelma puts some dirt in Nancy's pail. Nancy: *"Thank you, Thelma."* She says to Marie, *"Don't say 'thank you' when I give you pebbles, please don't."*

She is unusual in the spontaneous enthusiasm of compliments handed out to other children. For example, she goes over to Carleton who has climbed on top of a box, and says, *"Carleton, I think you're a good balancer."* Or she "tastes" Thelma's sand "cake" and says, *"Oh boy, it tastes good. You're a good baker. You're the best baker in the whole wide world."* Furthermore, she still on occasion shows a genuinely sympathetic interest in others. She tries to save Nell from having wooden saw horses piled on top of her by saying, *"No, it will hurt, won't it, Lila?"* She says to Dick, who has taken a tumble, *"Oh, that's too bad, isn't it?"* She comments on Elsie's absence with, *"I hope she hasn't a cold, don't you?"*

She is obviously not "perfect." She is quite naturally likely to be self-satisfied and self-righteous. When she voluntarily offers to help another child put her play material away, she points this out to the teacher. On another similar occasion, the teacher suggests that Nancy help take some of the toys to the toy house, even though Nancy had not herself used them. Nancy does so, remarks to the teacher, *"Aren't I good?"* A few moments later she suggests to another child that he do the same thing—*"Because I thought if*

you were (using the blocks), *you should come and help.*" On one occasion when Lila had been as usual "going after" Nell to the point of making Nell cry, Nancy points out, *"Did you say 'I'm sorry' to Nell?"* She is also, with all her strength, a little intolerant of others' weaknesses. *"Could you take off my trousers without my shoes coming off?"* Bernard asks Nell one day when they are in the dressing-room removing wraps. *"No,"* says Nancy sharply, *"Don't ask everyone to do everything for you."* Lila, on the same day, has difficulty in getting her play suit off: *"Oh, I can't get this off."* Nancy, who has hers off, says piously, *"Mine were quite hard too, Lila."*

But the sum-total of Nancy's personality characteristics made for a definite popularity in the group. Friendships that Nancy had established earlier continue while many others grow apace (Table 4). She has much less exclusive interest in Lila and Grant. In fact with Lila there are more minor conflicts due to changes in Lila as well, which are to be discussed later. We find Nancy even getting bored with Lila's conversation sometimes. Lila is, as so often, showing a high degree of self-interest. *"Once I had my picture in the newspaper."* Nancy retorts, *"I know. You tell me every day."* We also find Lila discriminating against Nancy in another child's favor. Lila is washing at a wash-basin, when Nancy comes up to wash with her. Lila pushes her away with, *"No, Randall is going to wash with me."* (Nancy characteristically simply says, *"All right,"* and goes to another basin.) This does not mean, of course, that these two do not often get along very well together, just as they did before, but one feels that there is now more strain in this situation.

With Grant, she plays very much less (18 per cent of her time as compared to 51 per cent in the fall), and though she is still fond of him, she seems to look on him now as pretty much of a weakling. Randall tells Nancy to bring Grant to him. She goes over, but Grant looks frightened, squeals and runs away. Nancy returns to Randall with, *"I didn't want to get poor Grantie because he was crying"*; then, after further deliberation: *"I'm going to get poor Grantie and tell him I'm sorry."* She is a little less eager to do things for him than she was. As in many earlier instances (when Nancy helped him out), Grant wants a special toy, but hasn't the courage to make a great effort about it nor the ability to adapt his

desires to what he can get. Nancy tells him, *"You'll just have to do without."* She is willing to help him if he will accept a substitute, but when he won't, that is that.

G. Changes in the Nancy-Lila-Grant Relationship

The triangular situation between Nancy, Lila, and Grant is now a highly variable one. Grant is occasionally excluded by Lila and Nancy, as on the occasion when Lila and Nancy were staging a play.

> When Grant came up, Lila said, *"I'm sorry, but you can't play."* Grant said, *"But Bernard is here. . . . Why can't I be in it?"* Nancy says to Lila: *"Are we going to have three or two?"* Lila: *"Two."* Nancy: *"Then, Grant, you can't."* Grant: *"You have to have a boy."* Lila: *"Bernard could be one boy."* A little later Grant tries again with, *"Why don't you have four people?"* but he gets no answer.

There are times when the three of them have delightful play together. On one occasion they are in the sandbox, Nancy and Grant sitting on the ledge, and Lila sitting in the sand.

> Nancy says, *"This must be the country house."* Grant contributes, *"And Lila's downstairs"* (in the sandbox, while they are in the ledge). Lila says something about *"telephone"* and continues to play with the sand; then says, *"They telephone from upstairs when it's very important."* Nancy says, *"You know how Grandfather used to telephone? They had a bell in the kitchen and the breakfast room from Grandfather's room. When he rang the bell they would hear it and come."* Lila looks at her, then pretends to dial and says, *"Is this Nancy?"* Nancy: *"Yes."* Lila: *"Could you come here for a minute?"* (Both are holding their hands to their ears as if telephoning). Nancy: *"No, 'cause I'm baking a cake and it's almost done. Could you wait a second?"* Lila: *"I didn't mean now, at twelve at night I want to tell you something."* Nancy: *"No, 'cause then I'm asleep."* Lila: *"Then—?"* Nancy: *"OK."* Lila: *"To-morrow night at twelve?"* Nancy: *"No, not any night."* Lila: *"Eleven?"* Nancy: *"No."* Lila: *"Ten?"* Nancy: *"No. I can at nine."* Lila: *"I'll tell you the best thing, at nine in the morning."* Nancy: *"At half-past nine, all right."* Lila: *"Yes, half-past nine."* Grant has been listening while they carry on their telephone conversation, and now he says, *"You know where my ding bell is? Here. Ding!"* Lila stands up and says, *"Yes?"*

Grant says, *"You have to stay downstairs,"* and Lila sits down again. She and Grant then converse on the "telephone," with appropriate gestures. . . . Thelma comes up and speaks to Lila, and then when she leaves, Lila "picks up the phone": *"Bzzzzz."* Nancy "answers" and says, *"Hello."* Lila: *"Is this Nancy?"* Nancy: *"No, this is Grant."* Lila: *"Do you know where she is?"* Nancy: *"No."* Lila: *"Is she out?"* Nancy: *"No."* Lila: *"Is she in bed?"* Nancy: *"No, she went out."* Grant then calls, with the "phone" at his ear, *"Hello, Lila."* Lila answers, *"This isn't Lila, it's Nancy."* Grant: *"That isn't Nancy."* Lila: *"Yes, it is, you can't tell by voices at all."* Nancy giggles and Lila says (still on the "phone"), *"I hear someone giggling, who is it?"* They all giggle, and Lila says, *"It's Lila giggling over the phone."* Nancy: *"This is Grant giggling."* Lila says to her, *"Hello, Grant."* They all giggle. This continues for some time, with much merriment on the part of all.

H. Changes in the Nancy-Lila-Nell Relationship

With Nell, the friendly rivalry continues almost unabated, though Lila takes even more of a leading part and Nancy is somewhat less active in it. It is somewhat more verbal, with the fact that Nell "tells fibs" and sucks her thumb, appearing in almost every incident. Again examples of this rivalry were so frequent that we can only give as example a mere fraction of all that went on.

In one case, Lila, Nancy, and Nell were in the sandpile. Nell started to take some of Nancy's sand and Lila said, *"No, don't."* Nell: *"She said I could."* Lila calls to Nancy, *"She's taking all that."* Nancy returns and says, *"I don't mind. I said she could."* Lila: "OK. I'll give her this." Nancy says something. Lila says, *"No, 'cause she tells fibs."* Nell: *"I do not."* Lila says something. Nancy: *"Don't give her as much 'cause she tells fibs."* She says something else and gives Nell some sand. Lila looks at Nell's hands, says, *"That's nail polish. She shouldn't have it 'cause she sucks her thumb, aha, she sucks her thumb."* Nancy says something about thumb-sucking. Lila says, *"Yes, and have to go to the hospital, too."* Lila says, *"Let's not play here, shall we?"* Nancy says something, manipulates pan of sand. Lila takes a little snitch of sand from it. Nell says something. Nancy says, *"No, 'cause Nell tells fibs and sucks her thumb."* Nell takes a snitch of sand from the pan. Nancy puts it quickly under the ledge of the sandbox. Nell tries to reach under. Lila says, *"Pinch her!"* Nell pushes at

Nancy and Nancy pushes Nell. Nell runs off. Lila and Nancy shout, then Lila says, *"She's coming back."* Nancy pushes sand up around the pan under the ledge. Thelma says, *"Fix it."* Lila says, *"I'll chase her."* She goes off. Nancy continues to pack sand around pan. Nell approaches, then runs off, Lila running after her. Lila shouts, *"I'm chasing her."* Marie comes up and says something. Nancy continues to pack sand around pan and then says, *"Will you help me fix this?"* Lila runs up and says, *"I'm chasing her,"* and then runs off again. Nancy answers, *"All right,"* and she and Marie pack sand around the pan. Nancy says something to Thelma about *"tells fibs."* Lila comes up and says, *"She put sand in Miss Wilson's shoe when she ran past, and she certainly doesn't deserve any."* Nancy says, *"No"* and Lila goes off. . . . Lila says to Nancy, *"I scared her to death."* Nancy: *"Oh boy!"* Nell approaches. Lila chases her while Nancy and Thelma watch and laugh. Nancy puts the pan under the ledge again and packs sand around it. She watches Nell and Lila and then says, *"I want to tell Miss Smith something. Here's some cake for you,"* and gives sand to Marie. Lila comes up, then runs off again. Nancy packs sand around the pan under the ledge and talks to Marie in a low tone. She gets up and goes over to Lila and Miss Smith and says, *"Let me chase Nell."* Nell runs off and Lila and Nancy chase her. Nell's shoe falls off and she sits down to fix it. Nancy runs up to her and pulls at her. Lila dances up and down, singing, *"Nell lost her shoe."* Nancy and Marie join in. Nancy goes up to Nell and pulls at her. Miss Smith says, *"Wait a minute."* Lila whispers to Nancy and Nancy answers, *"All right,"* and approaches Nell. Lila says, *"No."* Both approach Nell. Miss Smith says, *"Give her a head start."* Nell runs off and both chase her around the playground. Nell runs to Miss Smith. . . . Nancy goes over and pulls Nell. Miss Smith says, *"Now let Nell chase you."* Nancy says, *"No, 'cause we're having a fight 'cause she—."* Nell and Miss Smith go off. Lila whispers to Nancy. Both chase Nell again and Nell runs to Miss Smith. Miss Wilson suggests that they play hide-and-seek and that Nell be *"It."* Nancy and Lila say, *"Yes."*

Nancy sometimes even defends Nell against Lila. One of the most fascinating incidents in this rivalry situation occurred when (probably largely inspired by the teacher's appearance in the situation) Nancy completely reversed her usual attitude toward Nell

and piously showed Lila the righteous road. Lila's about-face, too, gave as vivid a picture of her personality as any incident could: The beginning of the incident was, unfortunately, unobserved. We first saw it when the teacher came up with:

> *"What's the trouble? Nancy said you were trying to hurt Nell."* Lila: *"I was only fooling."* Miss Wilson: *"I saw a lot of chasing. That kind of play is too rough."* Lila: *"I was just going to make her think that."* Nancy: *"That's not the way to do it."* Lila: *"Nell tells fibs."* Nancy: *"No, she doesn't, does she, Philomena?"* (Philomena is in the next sandbox with Elsie.) Philomena: *"No, not lies."* Lila: *"Don't you remember when she told lies to us?"* Nancy says something, then says, *"You're a good girl, aren't you, Lila?"* Lila: *"Yes, but not Nell."* Nancy: *"I think she's a lovely girl."* . . . Nell comes up. Nancy says to her, *"Yes, you are coming to the party. I'm going to ask your mother and she'll say yes."* Lila: *"She's not. She likes to tell fibs."* Nell to Lila: *"No! I'm not!"* Lila: *"Well, anyway, that's not the way to say it, is it, Nancy?"* . . . Nell walks up ledge of the sandbox. Lila jumps up and down as if to scare her. Both laugh. They repeat. Nell runs off and starts to get on a tricycle. Lila goes up to her and says something, then returns to Nancy. She says to Nancy, *"I'm a good girl, aren't I? I came here so Nell wouldn't run over me."* Nancy: *"Well don't run over Nell, anyway, please don't."* Lila: *"I couldn't, I would fall."* Elsie says something. Lila says: *"Well, you'll give me some of your cake, won't you, Nancy?"* Nancy: *"No, 'cause you hit Nell."* Lila: *"Then I won't give you any.—I'm going to tell Nell I'm sorry I hit her."* Miss Wilson comes up and says to Lila, *"You've been pretty cross, I think you'd better rest."* Lila: *"I was going to tell Nell I was sorry."* Miss Wilson, *"OK, then go for a rest."* Lila goes over to Nell and tells her she's sorry she hit her. Superficial as was Nancy's attitude toward Nell in the above situation, she also showed, on occasion, real affection for her—hugging, patting, etc.

In all of these relationships one gets the feeling that Nancy is pretty calmly going along her own way while the others approach or retreat, depending on what the situation seems to hold for them at the time. This especially applies to Lila, who because of Nancy's increasing independence and self-confidence, was no longer so easily able to lead her; and also who, because of the increasing spread in

Nancy's friendships and social interests, was not able to command so much of her time and attention.

From the foregoing account of Nancy and her interrelation with Lila, Grant, and Nell over a long period, it becomes clear that to ascribe her aggressions, or attitude toward them, to her "personality" adds little to our understanding; likewise, little is gained by referring abstractly to the "group situation." It is Nancy in her varying rôles as leader and comrade, as seeker of adult approval and group status, as mother-substitute for Grant and as competitor with Lila, that is ready for each concrete act of self-assertion and formulates each attitude regarding self-assertion; as she grows and as the group relations change, subtle but continuous changes in her behavior and attitudes have been observed.

So, too, the consequences of her behavior and attitude change and the effects of her changing attitudes can be traced in each of the other children.

I. Outcome of These Relationships

As for Lila herself, time, while strengthening Nancy's personality, seems to have shaken Lila's pretty rudely. Whereas Nancy's good qualities had been added to and intensified, Lila's less attractive qualities had come increasingly to the fore. Her tendency to dominate became more intensified. Even by the fall of 1935, it had become so marked that it was hard to believe it was really true. One incident was observed in which for 20 minutes straight she commanded every move of four other children—both verbally and physically. This incident is too long to give in toto. Here are excerpts from it:

> Lila, Nancy, Marie, and Nell are playing on some boards. Nell and Marie are running and jumping. Nancy says something to Lila about what she has and leaves to run again. Lila returns to base, calls, *"Why did you go up behind me? You shouldn't go behind another person. Come here!"* Nancy and Nell come over to her. Marie continues to run on boards. Lila takes Nancy and Nell by the hand and talks to them about, *"you must take turns,"* etc. Nancy says, *"Marie's taking too many turns."* Lila calls Marie. Marie comes over and Lila talks to her about taking turns. Lila says, *"Now it's Nell's turn."* Nell runs up the board, and Marie starts to go. Lila says, *"No, Marie, wait"*—*"Now it's Nancy's turn."* Nancy

goes up and Lila says to Marie, *"Now wait for Nancy."* Then Marie goes, and Lila continues to stand, telling each one when it is her turn. She pulls at Marie and says, *"No, wait till Nancy gets up."* Nell pulls Marie. Lila says, *"That was no fair, Nell."* Lila runs up the board, saying something. Runs again and says, *"Now let Marie go."* Grant joins them. Marie goes up, then tries to take another turn. Nancy pulls at her and says to Lila, *"I was holding Marie."* Lila pulls Marie and says, *"No, It's Nancy's."* Nancy goes. Lila says, *"No, let Grant."* This continues, with Lila pulling them into line, indicating whose turn it is, etc. . . . Lila gets in line, Nancy goes up. Lila says, *"That's a good way, Nancy."* She starts to go after Grant, then stands back and says, *"Grant is just learning, so let him go."* Then she goes up and jumps off, saying, *"Jump sideways. Jump sideways, you have to learn how."* Nell and Nancy go up and jump. Marie goes up and runs down. Lila says, *"No, we're learning how to jump sideways."* Lila goes up to all of them as they stand waiting for turns and says, *"Go back,"* pushing them back. She continues to push them slowly back, then goes to the last child and moves them back one by one. *"OK, that's enough."* Then she runs up and over board and then back, saying, *"You see I can run up."* . . . *"And that's the way you're going to learn how. Now let Nancy."* Nancy runs up and over. Lila, *"That's it, now back."* Marie comes back. Lila, *"Now I. I'll show you, Grant."* Lila runs up and over. Grant goes. Lila says, *"Good for you, Grant, that's it."* Nancy finally makes a rather feeble effort to break the dictatorship. When Lila tries to move them around in line, she says, *"I know a better way."* But Lila is equal to the occasion and quickly says, *"Just a second, now we have to stand in line."* She stands Nell, Marie, Nancy, and Grant in a row and says, *"Grant is taller, it's his turn."* Grant runs up, the incipient rebellion is quelled, and Lila continues to remain in complete charge of the situation, making such lofty judgments as (to Grant), *"You may have another."* . . . *"'Cause he just came back from home."* Or, *"Now I want to show you. When you go around, you have to go up and turn around. No, all wait for me."* She goes up the board and says, *"Now I'll do it again."* . . . *"See, you have to stop."* . . . *"No, that's not the way. Run around."* Nancy again questions the situation when Marie runs several times in succession with, *"Why let her have so many?"* but subsides at once when Lila explains, *"'Cause I'm just showing how."* She then continues,

"Now I want to show Grant just how you're going to do it. Stand here," etc., moving them around again. When Marie disobeys a command and takes another turn, Nell says, *"She's a naughty girl,"* but Lila, from her superior position, asserts, *"No, she's not naughty, she just should have done what I told her. I'm teaching her."* (Apparently Nancy is still feeling somewhat rebellious, because she mutters something about *"Naughty."*). Marie causes a temporary break when she runs away. Lila says, *"No, don't chase her,"* as the others in the group start after her, but then goes after Marie, herself, calling and beckoning, and finally stooping to physical means of persuasion by pulling Marie's sweater. When the teacher tells Lila to *"talk to them,"* Lila says to Marie, *"You had a turn,"* and then uses a more subtle technique, the origin of which is pretty plain, *"Do you want to sit down and have a rest and get your breath?"* The group reconvenes at the jumping boards, with Lila calling, *"Over here."* . . . *"It's a jumping turn,"* and they continue as before, with Lila in complete command: *"Grant, turn around, then get to there."* . . . *"No, Nancy, let Marie do it."* . . . *"Just a second."* . . . *"Now I'll show you."* . . . *"See, then you get here and jump sideways."* . . . *"Jump."* . . . *"That's right."* . . . *"Get your hands down like this, you won't get hurt."* . . . *"Down you go."* . . . *" Good, you nearly got it."* . . . *"Good for you, Nell."* . . . *"Nancy, you after me." "See, put your hand down like this."* . . . *"That's the way were going to do it."* . . . and the group remains in complete subjection. When the attention of the others wanders as Miss Price shows them something, Lila falls back upon, *"I told you to come."* . . . *"This is the way we're going to have to do it. Watch me. Watch,"* with much running, jumping, and pushing. *"See that? . . . Now I'll show you the real way."* She was in many situations highly dictatorial. *"You're wasting soap, stop it"; "She shouldn't chew gum in school, should Nell?"* (to the teacher) and similar statements appeared frequently.

She was in many ways quite selfish, distinctly more so than most children in the group. Refusing to let others (except Nancy) share in her play, hiding materials where others could not get them, refusing to help other children, refusing to let certain children even look at prize possessions she has brought to school, were characteristic patterns. Rarely was she sympathetic in her attitudes to other children, often quite the opposite. When Nancy suggested that piling horses on Nell might hurt her, Lila replied, *"No, it will*

make her better" (Nell was the "patient" and Lila was a "nurse"). When she saw Evan crying because he had had an accidental fall, instead of sympathizing she started to tell the teacher about his bad behavior in pushing somebody at some time in the past. She was very prone to excluding others from her play, whether alone or with others. Just as she was loath to share materials, she was loath to share activity. *"You can't play"* was heard often. She assumed quite a superior and *"I'm better than you"* attitude in many situations, often to the annoyance of other children. When she dropped something she would just as soon as not ask someone to pick it up for her. In playing tag with a large group, she says to the others, *"I know where she* (the child who is 'it') *is, but I'm not telling you 'cause it's no fair."* One day Randall said to her, *"Can I come to your house today?"* Lila paid no attention, did not answer. A moment later, she said, *"Yes, Randall. I'm answering your question—yes."* To which Randall replied in an annoyed tone, *"I didn't say anything."* Several times she went up to children playing in the sandbox, saying, *"I'm sorry, but I can't come in the sandbox with my good shoes on"*—no request having been made that she do so. Over and over she would try to cover up real motives for her actions by excuse or rationalization, or make pious statements about her behavior and continue to overlook the other fellow entirely. On one occasion she showed herself up only too plainly. Randall and Lila were together, when Grant came up to them. Randall said, *"We'll say, 'Grantie, Chantie,' for fun."* They both sang *"Grantie Chantie"* several times. Lila then said to Grant, *"I'm sorry to sing it. I just didn't know you were here. I just didn't mean to do that."* Then, with Grant still there, she went right on singing it. She was very self-righteous and very much of a show-off. She was always pointing out to teachers or other children what a model child she was: *"Nell doesn't say excuse me, but I do"; "See, I'm a good worker —you think I'm trying, don't you?"* Or, when, the teacher points out to Nancy that she's not cleaning up as she should be, Lila points out, *"It's cleaning up what I'm doing." "Show Grant how well I can do it," "Did you see me—?"* were other similar statements. She was likely to follow them up with "helping" others do a stunt she had just done, then remark in a patronizing way, *"Good for you!"* or *"That's it."*

She seemed to feel that she had to be ahead of the next child, in every way. When she tried, but failed, to roll a ball through a

roll of paper, and Bernard remarked, *"You didn't win,"* Lila retorted, *"Certainly!"* When a child would tell her some conversational item, she would retort, *"I knew it before you, ha ha ha"*—which did not encourage the other child to continue the conversation. Her habit of being vain of her personal appearance and of calling attention to herself in one way or another became more and more marked. She would stand in front of the mirror for appreciable intervals, combing her hair, patting her face, fixing a ribbon on her hair. One heard over and over remarks like the following: *"My mother always likes me to fluff my hair after I comb it"; "See, I have powder and rouge on"; "Don't you think I have a nice dress on?" "Don't you think I comb my hair nice?" I brought my nurse's costume. Like to see me in it?"* She frequently commented on sores, hurts, etc., which received only rebuffs from teachers, no attention from other children. *"I got to play in the sand,"* she says to Nancy. *"'Cause I look sort of punk."* (The nurse had told her to play in the sandbox where it was sunny.) She remarks to the teacher that something in her mouth hurts, or points out an old scab. When the teacher only remarks that it will be all right soon, or that it's nothing to worry about, Lila only tries harder to win sympathy; *"But it hurts"; "But I've had it a long time."* Her efforts were pathetic, but she never won.

Naturally, with so much interest in herself, her own personal integrity was a matter of extreme importance. When it was threatened in any way, she went to pieces. It took little provocation to make her scream and go wild. Marie once called to the teacher that Lila was not cleaning up, and Lila screamed frantically, *"I am so!"* Lila had once, at the teacher's suggestion, gotten a pan from the playroom closet to use in the sand. The teacher had asked her to put it back when she was through. Lila told another child this, but since it was so out of the ordinary, the child did not understand. Just this made Lila so impatient that she kicked a block near her, then proceeded to scream at the child—who had only asked why she had to return the pan—*"Naughty manure! Naughty calcate manure! That's what Marie is."* On another occasion she asked Nancy to *"Watch out for your eyes"* as she (Lila) swept sand back into the sandbox. Some of it flew on Nancy and Nancy said reprovingly, *"Oh, Lila, I just had my hair washed."* *"It's your own fault,"* said Lila, *"for staying there when I told you to get out of the way."* Nancy went off. Apparently Lila thought

she was going to tell the teacher, and she screamed at her, *"It's clean-up time!" "I know that,"* Nancy said, and left her. Lila yelled after her, *"Tattle tale, tattle tale,"* over and over again. An outstanding example of her going wild under such circumstances was one in which it took her several hours to stop talking about the injury she had received. She went around from child to child, trying to buck herself up about it, trying to win the backing of other children to salve her feelings, changing her story so that she really believed herself that she was not the injured but the injurer. It was one of the most dramatic incidents of the year and yet very typical of the mechanisms Lila was showing in her pathetic attempts to save her own ego.

> Lila is standing beside Thelma, looking around. She calls, *"Hello, Evan."* Evan rides up to her on his tricycle, says *"Hello"* and goes on past. Lila says, *"Hello, see my rose?"* (in the buttonhole of her coat) and walks to the see-saw with Thelma. Lila gets on the see-saw with difficulty and says, *"Don't, I'm not on."* They get on and she and Thelma see-saw. Lila shows her rose to the observer, then they continue to see-saw, laughing. Lila sings, then says, *""Did you know some bees don't sting? Ones with—noses don't."* Carleton (on the jungle gym) calls. Lila calls to him, *"I've got a nice flower, a rose."* Carleton answers, *"It's a paper flower."* Lila: *"No, you won't, I just got it today."* Carleton says again, *"It's a paper flower."* Lila: *"No, it isn't."* Thelma asks, *"Was it growing in the school?"* Carleton comes over to the see-saw. Lila says, *"Don't take it."* Carleton leans over and smells the flower. Lila: *"Don't."* Carleton: *"It's paper."* Lila: *"No, it isn't."* Carleton leaves. Thelma says, *"It's a honey rose,"* and they continue to see-saw, bumping and laughing. . . . Lila calls to Jerry, *"I got a nice flower, want to smell?"* Jerry comes over to her and smells the rose. Lila says, *"Isn't it nice?"* and Jerry answers, *"Yes."* Lila: *"I like to smell this instead of the gummedgy smell."* They laugh. Lila says, *"There was a fire across the street from us last night and we heard the fire engine go ding-ding-ding. Daddy let me look out of the window and I saw the ladders. It was down in the basement. The fireman who takes care of the furnace just didn't know any better and just left the place."* Jerry says, *"Didn't he get the fire out?"* Lila: *"Sure. And he just wanted to sleep, he just went away and slept and the furnace caught on fire."* Carleton comes up again and says, *"Whose house?"* Lila: *"I*

don't know." Carleton sits down on the see-saw and says, *"Once my house was on fire. Nine houses caught on fire."* Lila squeals and laughs. Carleton: *"And the water tower had to come, too."* Lila laughs and Carleton smiles. Lila: *"And did they have to jump out of the window?"* Carleton: *"No, they didn't."* Lila: *"Once I saw a fire and the people had to jump out, really and truly they did."* Carleton: *"Did they get kicked on the neck?"* Lila: *"No."* She laughs. Carleton says, *"Once father and me went down the fire escape. You never did, did you?"* Lila: *"No."* Carleton says something and Jerry says, *"Mine is a fire-proof house."* Nell and Grant come over and listen. Carleton says, *"I sleep in the attic."* Lila laughs. Carleton says, *"That isn't funny. The fire escape is right next to my window."* Lila laughs. Carleton smiles, then says, *"That's not funny."* He snatches at Lila's rose, saying, *"I'll take the flower away."* Lila says, *"I'll tell the teacher if you do,"* and begins to cry. Carleton says, *"Did I do it?"* Lila cries hard and says, *"It's busted."* She gets off the seesaw suddenly, it flies up and Carleton is knocked off. Carleton cries hard. They both go toward Miss Wilson and the other children congregate. Lila cries and says, *"He was a bad boy 'cause he busted my flower. He was a bad boy, wasn't he?"* Miss Wilson says something to the group of children about *"they were just teasing each other."* Lila and Carleton both cry loudly. Miss Wilson says to Lila, *"You know better than to let the see-saw down quickly."* Lila: *"He busted my flower,"* still crying. Miss Wilson: *"It was an accident."* Carleton cries loudly and says, *"She busted my leg."* Miss Lord comes up to the group, and then takes Carleton off. Miss Wilson asks Lila to put Kleenex in wastebasket. Lila picks it up and walks off. She goes over to Miss Price and says, *"You know what Carleton did?"* Miss Price: *"You don't need to tell me."* Lila goes off and puts the Kleenex in the wastebasket. Philomena is near by, walking on some raked ground, and she says to Lila, *"Let's step all over it."* Lila laughs, joins her, and they make footprints in the loose earth. Lila says, *"You know what Carleton did? He busted my flower and it's new. Wasn't he bad?"* Philomena: *"Yes. How old is he?"* Lila: *"Five, and he should know better."* Philomena: *"Yes."* Phyllis comes over to them and asks, *"Where did you get the flower?"* Lila: *"A lady in the street car gave it to me."* Julius comes over and smells it. Arlene comes and smells. Lila says to Arlene, *"A boy named Carleton busted it and he's five years old and*

should know better." Arlene: *"Yes."* Julius holds a Red Cross badge out to Lila. Lila says, *"I've got a real one."* Julius leaves. Phyllis returns and shouts, *"Baby, baby, Philomena is a baby."* Lila says, *"I'm not 'cause I'm four and a half years old."* Phyllis: *"No, not you."* Lila: *"Not either of us."* Phyllis: *"Philomena is."* Philomena: *"No, I'm not."* Phyllis: *"I'm going to stand in the wastbasket."* Lila and Philomena watch her get in the wastebasket and laugh. Lila goes over to Miss Price and says, *"You know, Phyllis got in the wastebasket."* She laughs, then goes and tells Miss Wilson. She goes up to Nell and repeats. Both laugh. Lila then wanders over to Bernard, who is on top of packing box, and says, *"Know what Carleton did? He busted my flower and took the leaves off. Wasn't he a bad boy?"* Bernard: *"Yes."* Lila: *"You go and fight him."* Bernard is a little reluctant, *"He hurts me all the time. Get Holden to fight him."* Lila says, *"I punished him."* Bernard: *"How?"* Lila: *"I got off the see-saw and hurt him."* She laughs. Bernard: *"How did you hurt him?"* Lila: *"I got off the see-saw and hurt him on the chin and the leg."* She laughs. Thelma comes over to them and Lila says to her, *"Wasn't that a good idea?"* She looks at the flower and says, *"It's not as nice now, is it?"* Thelma, *"No."* Lila: *"I think I'll take it upstairs."* She goes over to Miss Wilson and says, *"I think I'll takes this upstairs."* Miss Wilson: *"That's a good idea, if you could come down quickly."* Lila: *"Yes."* She and Thelma then spend some time upstairs choosing the appropriate vase and position for the rose. Lila finally places it on the piano, saying, *"See? Now no one will reach it except the teacher. It's a good place, 'cause nothing will happen to it. None of the children will think of standing on this table."*

As with Nancy, however, personality characteristics were not all on one side of the slate. Incidents quoted above show that she could join well in play at certain times and make herself an enjoyable person. Not only was she adept at imaginative play, but she enjoyed and took part in gay "foolishness" of all kinds. Her language and verbal abilities were always of a high order and often amused other children. They did not always understand the terms she used, but they seemed to like them. Once when she fell off the end of the see-saw, she said, *"I fell off unconscious—I didn't know I was doing it"*; another time: *"I collapsed."* To Holden, she remarked once, *"I haven't any stockings on. I disappeared them off.*

Want me to disappear them on again?" Such remarks were apt to be met with an outward *"Isn't she silly?"* attitude, but usually accompanied by a smile of appreciation.

There were times, too, when she could be very generous with other children. For example, when one of the boys in the older group occupying the same playground came over to the sandbox where Lila and Marie were playing, Marie greeted him with: *"You don't belong here. You have enough room over there."* (On certain days the sandboxes were legitimately the property of one group, on other days of the other. Marie had a right to order him off if she felt like it.) Lila, however, stood up for him: *"It's all right. He sometimes plays over here."* On another occasion Arlene was following Lila and Nancy around. *"Could you get out of our way, please?"* Nancy said, putting her arm around her and trying to move her gently aside. But Lila was more generous: *"I know what Arlene could be—the cook."* Incidentally, further evidence that Lila could be as attractive as she could the opposite lay in the fact that for quite a period Arlene was following Lila (not Nancy) around almost all the time and trying to make friends with her.

J. Influence of These Relationships on Lila's and Nancy's Attitudes toward Aggression

Turning back, now, to the question of aggressiveness proper, it can be seen how the developments which took place in the friendship between Lila and Nancy, and in their social standing with other children as well, influenced the degree of their aggressive behavior and their attitudes toward aggression as well. Throughout the period in which this study was made, the two children, when together, seldom had differences of any kind, and when differences occurred they were quickly settled. But behavior toward other children on the part of both showed gradual changes which affected this friendship, and through it brought still further changes. Any shifts in a relationship as strong as this one were sure to produce these more generalized changes in behavior.

Perhaps the greatest strain put on Lila's relationship with Nancy was the fact that Nancy seemed to be gradually growing away from Lila. During the year 1934-35, Lila appeared in some ways to dominate this relationship. Always a more outgoing child, Lila was able easily to carry along with her a child like Nancy who was usually willing to do what the other person wanted. As a matter

of fact, as long as Lila continued to be the most important person in Nancy's social life and could therefore feel secure in her relationship with Nancy she did not show many active dominating techniques with Nancy. She did not need to. As Nancy became more interested in more children Lila became more and more dominating with her. Nancy, in the meantime, went placidly on her way, becoming more dominant herself because she never dominated anyone. A gang developed around her like flies around honey. They could not resist a child who, with all her other interesting points, was willing to follow their lead.

But this development of a position of dominance on Nancy's part seemed clearly linked with a development of personality strengths. Throughout the year of 1935-36 she was definitely learning to stand up better for her own rights, to be somewhat more aggressive on her own, to show a greater maturity and less timidity in handling conflict situations. Part of this, we believe, was a matter of age development since there were certain similar trends throughout the group. It was during 1935-36 that gangs and cliques became the order of the day, with friendly rivalries and good-natured sparring appearing as the chief manifestations of underworld politics. Nancy became interested in her own little pet rivalry. But this was not all. There was undoubtedly a direct relationship between the development of Nancy's aggressiveness and her contacts with Grant. As described above, Grant led her into aggressive play and from there on into teasing and playing at aggressiveness toward others of a sort which we had not seen occur before in Nancy's behavior.[4] She had on very rare occasions pushed or knocked other children when there was something to be gained by it. If she had ever before gone aggressively at others without some more concrete motive than for the fun of being aggressive, it had happened so rarely that it had not appeared at all in our observation records. But for a non-aggressive child to learn to become aggressive is quite a hurdle to jump. For a period, Nancy went a little wild with it and went further than perhaps she ever really wanted to do. Some of her behavior with Nell was of this nature. Gradually, however, she settled down to a point where she seemed to handle each situation in a much more mature way. When it was possible to deal with the difficulty by verbal means she did so. When this was not pos-

[4]We refer to her behavior in 1934-36 only. During 1932-34 she had shown a normal amount of overt aggression.

sible, she was no longer afraid to hit out. A very striking instance of this occurred once when Nell, Lila, and Nancy were pretending to paddle a boat, using two-foot boards as paddles. Nell kept getting herself and her paddle in Nancy's way despite Nancy's protestations, and finally Nancy simply gave Nell a good hard poke with her board and knocked her down. She seemed quite steady about even her hitting. She knew what she was doing, and did it. Later, she confessed that she wasn't a "good rower," but added quite philosophically, *"but we had to push her off."* In the spring of 1935 it had seemed to us that her low aggressiveness was related to some anxiety. In the spring of 1936 it no longer seemed to be a matter of anxiety. The whole picture now was one of a happy, well-adjusted child. She did not even then do much more hitting than she had done a year earlier, but this seemed to be simply because she had many other techniques on her string which she preferred—not, as it had seemed a year earlier, because she was afraid of it.

This impression of a change in the whole picture was borne out by her behavior in the experimental situation. In the spring of 1935 she was a too-serious, too-moral child; in the fall of 1935, when, with probably a good deal of conflict, she was learning to be more aggressive, she showed intense emotionalism on this subject in talking with us. In the spring of 1936 we saw her in the experimental situation before observing her on the playground. A note was made then of the manifest difference in her whole attitude. The "anxious expression" was gone from her eyes. She greeted us in a happy, friendly, self-assured way. And she told us with no qualms that it was perfectly all right to hit back. Here, as in all cases, it would be interesting to know what had been going on at home. Our view, however, is that her experience with normal children to whom aggressiveness was not a sin had at least had a large share in the resolution of this particular conflict.

Lila, in her behavior on the playground, had, over the same period, become more and more violently aggressive. This was consistent, too, with all the trends in her personality during this time. Again it would be helpful to know what was happening at home, but we believe that her relationship with Nancy also had a share in these personality developments. In earlier days, Nancy and Lila together had had a strong position in the group at large; they were the "old girls"; they knew the ropes. They could move

ahead quite securely in a familiar situation while other children were groping their way through. They did not have to look around for friends because they had each other and, in having each other, attracted other children. Furthermore, Nancy always pretty much let Lila have her way and never violently opposed her. But then the relationship began to change. Nancy developed other loyalties and with her growing independence and self-reliance, in addition to her other attractive qualities, she became a group leader without even trying and made friends without even trying. Lila's way of gaining leadership had always been more direct—commanding, running the show, and so on. As she began to lose weight with Nancy, she tried harder and harder to run things. She became more and more actively dominating. Naturally, this did not win other children; therefore she tried harder and harder, and the more she tried, the more she was left behind. The more her personal importance was undermined, the more violently she fought to hold it, and the more she lost it. Hence we saw steadily increasing aggressiveness, especially in the form of going to pieces when her personal integrity was hurt in one way or another. Also, the more she felt her personal integrity to be hurt, the more it was capable of being hurt. Slights to her self-importance which earlier might have been overlooked became matters for intense upset.

It is interesting now to put against this the change in her response in the experimental situation. In the fall of 1935, at a time when she still seemed to feel relatively secure in her social standing, she showed an independent, utilitarian attitude toward aggressiveness. In the spring of 1936, the independent attitude was missing. Instead, she gave us the good old pattern response of "hitting is not nice." Presumably she was seeking our approval as well as every one else's.

K. Relation between Aggressiveness and Relative Age and Size of a Group Member

We should like to say just a word about Holden, since in his case there was the influence not only of a close friendship with another child, but also the more general influence, referred to above, of his youth and small size as compared with other members of the group. In the year 1934-35, the first influence seemed to be of equal importance with the second. In 1935-36, the first had dropped out. It is not necessary here to go into the details of the friendship

between Holden and Denison, and the influence of this friendship upon Holden's aggressiveness, since this was dealt with in detail in a former study (8). Summing it up briefly, the teachers had appeared to make an effort to break up this friendship and to direct Denison's affections toward other children. A prolonged illness and absence on Holden's part aided them in forcing Denison to seek other outlets for his social needs. By the time Holden returned, Denison had become very fond of a third child and Holden was not so constantly sought after. Holden attempted to win other friends among the boys in the group. He really seemed to be "fighting" to find a place for himself. His apparent unhappiness over the loss of Denison, coupled with the need to make himself felt with children all bigger than himself, seemed to be back of the aggressive techniques he developed in his approaches to these children. This rise in aggressiveness took place in the late spring of 1935, following his absence. Our records taken during this year were obtained just before his absence, and hence do not show especially high scores on aggression. But the aggressiveness which came later carried over into the fall of 1935.

Denison had now left the school, so that this situation was not present any longer for him to contend with. However, the other few smaller and younger children who had been with him during the previous year had been kept back in a younger group, while Holden alone of these younger children had been promoted. This made him now the smallest of all the children in the new group. It had probably from the start been in some ways an unfortunate circumstance that he was a child of high intelligence and wide interests and abilities. Because of these he sought the companionship of older children, and because of his small size he had first to overcome a strong barrier in their attitude toward him. To young children the matters of age, size, and similar evidences of superiority are of tremendous weight.

> Over and over, the *"I'm bigger than you," "I'm older than you"* motif is heard in their conversations as a means of expressing superiority. *"Baby!"* was the most contemptuous term in their vocabulary. When a member of the older group on the playground tried to tell Nancy and Lila they did not belong in the sandbox on that day, Lila retorted proudly, *"We're big—three years and ten months." "Three years and eleven months,"* said Nancy. The other child said to Lila,

"You're only a baby," but Lila stuck to her guns: *"Three years and ten months."* Apparently the older child could not get around this argument. Evan at the age of about three and three-quarters, picks up some blocks one day and carries them to the wagon. Jerry asks for one. *"No,"* replies Evan. *"I take two and I'm the biggest."* More than a year later, Evan was still using the same argument. He wants to help Randall and Bernard get their tricycles out of the mud, but Randall says, *"Let Jerry, 'cause he's stronger."* Evan: *"No, 'cause I'm five."* Jerry: *"I am too."* Evan: *"I'm over five, five and a half,"* the latter being a stretch of the imagination which forced Jerry to stretch his, too. *"So am I."* The matter of age was even so important that it sometimes served as a password to friendship. Faith says to Lila, *"I like you. Do you like me?"* Lila: *"Yes."* (The two were not at this time well acquainted.) Faith: *"Nancy, too. I like her."* Lila: *"How old are you?"* Faith: *"Five."* Lila: *"I am, too,"*—and that seemed to make everything all right. As for Holden, just because he was the smallest he had to do everything possible to try to prove he wasn't. For example, one day he went over to Henry, who was several inches taller than he, stood beside him, and said, *"I'm bigger."* Henry: *"I'm four and a half. How old are you?"* Holden: *"Six."* One of the bitterest blows he had to take was being considered (and called) a *"baby"* by the others. For example, on one occasion he and Ralph, a boy in the older group, got into a fight which came up before the teacher for settlement. When the teacher asked, *"Why didn't you explain?"* Ralph said, *"He's such a baby you can't explain."*

Holden's high aggressiveness in the fall of 1935 appeared due, in part at least, to the fact that the difficulties of this group situation for him gave him a feeling of insecurity which showed itself in aggression; and that, as he found that aggressiveness easily attracted the attention of other children, he quickly learned to capitalize on it in more ways than one. If he could not win attention and approval in any other way, he could at least be the toughest guy in the group. He could swagger and strut and show the other children incontrovertible evidence that he was someone to be reckoned with. He was. He fought on every possible occasion, and he made his blows felt. He pointed out over and over that *"I'm stronger than you"*; he learned to do almost impossible physical feats just to show he was better—such as going upstairs three at a time,

which no one else could do. Furthermore, he had to prove that in spite of his size he was not afraid of anything. When told not to touch a possession of another child's he deliberately did so, just to show he wasn't scared to. He also engaged in much harmless teasing with much the same attitude with which a gangster sports a diamond pin. He would swagger through the playroom when some of the children were resting, ruffling one child's hair as he went, flicking his hand at another. Added to all of this was the bloodthirsty attitude shown in both word and deed: in threats like those quoted in a previous chapter or in incidents in which he would suggest something very akin to strangling another child. Or, when helping another child move an enormous pole in the gymnasium, he would remark casually, yet with conviction, *"You know what I could do? Put her head in this big hole and her stomach here"* (pointing to holes in iron base of pole).

There is no doubt that he won attention by activity of this kind. Throughout the group when aggressiveness was needed, Holden was the one called upon to supply it. Over and over again one heard the refrain, *"Get Holden to do it."* In the incident quoted above, when Lila asked Bernard to go after Carleton for her, that was Bernard's response. Grant appeals to him for help with, *"Will you do it to Julia 'cause she's going to shoot me."* Joyce, when the teacher suggests she go in the sandbox, shies away with, *"Holden won't let me"* (he is nowhere around at the moment). Nell says to Nancy that when she sees Holden, *"then he'd spank me."* Evan wants to turn a somersault and calls, *"Everyone get out of the way. Holden, tell everyone to get out of the way."*

It was shown above, however, that in some cases he was disciplined by the group for his aggressiveness. One older boy in particular, who at that time was quite a leader in the group, several times made the point that Holden was not an acceptable recipient of a party invitation because *"he fights."* The fact, however, that he won the reputation that he did, that children called on him for help rather than just being antagonized by his behavior, was probably due to the wide range of his interests and abilities, and in addition to this, a number of very attractive characteristics. In the spring of 1935 he showed in his friendship with Denison a great deal of sympathy and affection. When Denison accidentally hit his own eye with a spoon and began to cry, Holden looked at him very affectionately. He then said, *"Go and—,"* looking around as if

looking for a teacher. Denison continued to cry, rubbing his nose. Holden looked at his watery nose and laughed, *"Hey!"* This stopped Denison's crying. The instance was quoted above in which, when Holden pushed against Denison with his tricycle and Denison asked him to stop, Holden told Denison to *"Ride on my foot."* One of the most charming examples was that in which Denison had been hurt while playing with a barrel. He came over to Holden, crying and reaching out for him, *"Let me stand on here"* (board by Holden). Holden said in a very solicitious tone, *"What's the matter? Did it hurt you?"* Denison nodded. Holden: *"OK!"* He ran over to the barrel, and kicked it hard and pushed it around. This made Denison laugh, and he followed Holden to the barrel. *"You go away,"* said Holden, *"it'll hurt you."* They both then went over to the sandbox to play, Holden remarking, *"We don't like that barrel, do we?"* This same characteristic of sweetness and sympathy showed itself then and later in many situations. When a dead bird was found on the playground one day, many children expressed great curiosity and interest, but Holden was the first to be truly sorry. *"Oh, the poor birdie,"* was his first reaction. When he was present in some of the rivalry play against Nell, he was the one to say, *"Don't put that board on her head. What a silly—."* He frequently noted hurts and bruises of other children and commented on them. Furthermore, he could be a lot of fun. There was probably no occasion in the entire period when a group of children seemed to be having as really gay a time as once when Holden was leading them in some acrobatics. He would get up on a ledge and, shouting, *"I'm all shewy—blesh you!"* he would tumble over backwards on the mat beneath. All the others began to do the same, and with much laughter and many *"blesh you's,"* they continued for some time. He was as adept at more sober dramatic play as he was at rough-and-tumble play, which made it possible for him to be a real member of other children's play if they felt like accepting him and he felt like doing so. He was very willing to be coöperative when the situation demanded it. When Bernard had been pulling him in the wagon and stopped because he was tired, Holden immediately got out and pulled Bernard in the wagon. When Morris returned for a shovel he had left behind, Holden naturally did not want to relinquish it. He pointed out quite rightly that Morris had left it and was not using it. But he also was willing to see Morris's side of it, and ended with, *"OK, when you get through I get it, yeah?"*

Perhaps one of the characteristics which attracted other children to him was one which was least attractive to the teachers. Toward them he had a characteristic devil-may-care attitude which was apt to gain their deepest disapproval but the admiration of all the children. They seldom dared to be as blatantly independent as did Holden, and they looked on him with a certain respect and glee. Holden was no more afraid to defy the teachers than he was to defy children older and larger than himself. A teacher tries to reprove him and Holden says haughtily, *"My name's George* (his first name, which was never used). When he is supposed to be settling down for rest, he has much more fun climbing on the piano, then giggling and whispering and keeping the room stirred up. The teacher tries to quiet him by shaking her head at him, *"No."* Holden in response nods his head, *"Yes."* He was one of the leaders in a little anti-teacher game various members of the group often played. When it was time to leave the playground to go indoors, they would climb to the top of the jungle gym where the teacher could not reach them and stay there. He could certainly make life difficult for a teacher when he wanted to.

> An outstanding example occurred one day when the teacher had told him it was time to go in. Holden, instead of going in, continued to kick a cardboard tube around (this tube was about three feet long and six inches in diameter). The teacher reminded him, *"We're going up now."* Holden: *"I want to sit on it."* Teacher: *"That doesn't make any difference."* Holden: *"It does, too."* The teacher took hold of one end of the tube and lifted it, holding Holden's hand with her other hand. Holden managed to get his feet wrapped around the tube and held on, but quickly he gave this up. The teacher proceeded to carry the tube to the toy-shed, holding Holden tightly by the hand. Holden said, *"I'll kick you!"* and kicked at her several times on the way. The teacher then took him into the toy-shed, set the tube down and said, *"We'll sit here for a while."* She sat down on a bench, pulling Holden down beside her. He picked up some dirt and threw it. Teacher: *"No, we're trying to get settled."* Holden: *"Throw it in your face."* Teacher: *"We're trying to get settled."* Holden: *"I'm ready."* Teacher: *"No, you're not."* They sit a moment. Holden suddenly jumps up: *"Im settled!"* The teacher pulls him back *"No, not yet."* They sit. Holden again jumps up, *"I'm settled!"* The teacher pulls him back. This is repeated several times. Then the teacher

says, *"It would be a good idea to put—away."* Holden: *"No, I won't."* Teacher: *"That's what we're thinking about."* They continue to sit. The teacher says, *"Now you can put those away."* This time Holden complies.

It can be seen how, in a difficult situation, Holden definitely carved a place for himself in spite of the attitudes which were forced on him by the situation. The backing of his father in independence, and to a large degree in aggressiveness, probably overrode whatever other attitudes toward such behavior were present in the situation. Of the latter, the attitudes of other children appeared to be the most important. They were seen to put a direct curb at certain times on his behavior. We suspect very strongly that his saying to us in the experimental situation in the fall of 1935 that hitting is "not nice" was largely the perspicacity of a bright child in trying to say "what the teacher wants." The gleam in his eye when he said it, together with the facts of the situation, made us feel that for him other things were far more important. What they all were, no one could know. That he was the smallest in his group at school certainly had its share in making his very aggressive attitude predominate.

In this chapter we have undertaken to describe the relationship between Nancy and Lila and the personalities of each in order to show that a child's rôle in the group must be fully appreciated if his specific conduct and attitude are to be interpreted. The same would be the case had we chosen any other individuals for intensive description and analysis. We have found that each child's behavior depends on the child with whom she is playing, his status in the eyes of that child, his specific gratifications and frustrations in that relationship, as well as upon his deep-rooted traits and his degree of maturity. We have given more space to verbatim citations than to generalizations, so that the reader may be enabled to see the full complexity of the context in the light of which Nancy's and Lila's behavior emerged.

Indeed, in a study such as this, the ever-present problem to the writer is the degree to which one may, and should, offer generalizations. The fore-going material appears to clarify the issue as regards the *kind* of generalization to which such a study may aspire. It is evident that laws and principles relating to fixed *amounts of aggressiveness*, or *degree of condemnation of aggressiveness*, traceable in relation to each separate social fact, are not at all in order;

indeed, it is probable that an attempt to formulate such generalizations would destroy the meaning of the concrete material found. It is evident that specific "social factors" must pass through the complex individuality of each child and may give, both qualitatively and quantitatively, very different kinds of results for each child.

In another sense, however, the foregoing material, especially as it relates to these particular children, permits the following general hypothesis which may be tested by succeeding chapters: (*a*) Aggressiveness, and attitude toward it, depend on degree of intimacy between the contestants; (*b*) the social rôle of the individual child sets limits upon, and prepares the stage for, the varieties of aggressive behavior; (*c*) increasing maturity and experience alter the type of rôle which the individual child is likely to accept and consequently the forms of aggression and of reaction to it.

V. THE CHILD'S PERSONALITY AND HIS ATTITUDES TOWARD AGGRESSION

In Chapters III and IV we have endeavored to trace the influence of parental and group attitudes upon the individual child's conduct and attitude and the influence of his rôle in the nursery school group.

There remain, however, certain aspects of each child's response which depend in large part upon his own deep-seated character and personality traits, each of which may be colored, yet hardly obliterated by social pressures. These will be considered in the present chapter. Since quantitative comparisons cannot be meaningfully presented with our limited material, we shall try to give a unified picture by giving chief emphasis to the data for a single child, mentioning others primarily for purposes of comparison.

That there may be a conflict in attitudes toward aggression based on a conflict of loyalties between parents and friends is only one aspect of the problem. Feelings of love and loyalty towards one's friends also competed with equally strong feelings of antagonism. These were normal children. They had the same feelings of hostility, rivalry, resentment toward others in their group as every child has toward potential rivals even though these rivals might also be best friends. They were just as interested in maintaining their own rights, having their share of property, of love, of power, of prestige, as all children of similar age. They undoubtedly felt the hates and antagonisms that all children feel on occasion—and they had the same need to express them in some way. Being children, they naturally tended to express these feelings in their most simple and direct forms—in open aggression. Attempts on the part of parents, teachers, other children to limit or even to redirect this aggression were bound to bring for each child a certain amount of conflict. He had to restrain himself from responding in a direct way to all the situations that created such feelings, to hold himself back from exhibiting the spontaneous response. With this came feelings of guilt whenever his impulses slipped through. He came to regard himself as "bad" and aggressive behavior "not nice." He felt himself to be especially "bad" because so often his bitterest attacks were against those for whom he had the greatest affection. The degree of conflict, the intensity of guilt feelings, the verbal expression of attitudes varied in each case. Also they varied with the rise and fall of feeling in different momentary situations as well as in long-time

developmental changes. But in every case there appeared to be this fundamental conflict between what the child felt like doing and what he was learning he should and should not do.

A further determinant in providing the basis for conflict was the relation between the child's fundamental personality patterns and the kind of behavior acceptable in his environment. For example, the degree of his "outgoingness," the extent to which he tended to express all feelings in *active, open response* directed toward other people, helped to determine the degree to which hostilities were overtly expressed and hence the extent to which he *"laid himself open" to feelings of guilt.* It seemed to us interesting and significant that Nancy's conflict over the question of whether she should or should not hit other children should have worked itself out as easily as it did. We mentioned earlier that this may have been partly due to an unconscious parental acceptance of a certain degree of aggressiveness. We pointed out that the father was not too sure he was right in the attitudes he expressed verbally to the child. But it seemed important, too, that Nancy even at her most aggressive was still pretty mild. Had she tended to go to extremes as Lila did, feelings of guilt over her behavior might very well have intensified the conflict. But since it was her nature to be moderate in all things, she never carried herself beyond the bounds where "she could take it." Her personality, working along with parental attitudes, held her back from hurting herself too badly. It held her back from hurting the other children too badly, too, and right along she had their support for her behavior, shown by her constant popularity through all this period. The influence of other children, the influence of practical experience in dealing with other children, the influence of her status in the group, would probably never have led her so easily to reject what her parents had to say about hitting had her own tendency to be mild in all her behavior not been helpful in keeping her from doing too great damage to her feelings.

Lila *did* tend to go to extremes. Her parents' acceptance of a certain degree of aggressiveness made for no early conflict. In the fall of 1935 Lila seemed perfectly happy about it. But difficulties —partly at school—and emotional upset over difficulties increased aggression. In spite of herself, aggression went to extremes, because she was through nature, nurture, or both, that kind of child. This frightened her and made her feel guilty. Even though her parents

accepted hitting, she pretty well realized their acceptance would not go to the point to which she carried it. Not even other children accepted that. She showed her feelings of guilt in (*a*) rationalizing her behavior, (*b*) increased jitteriness and still further aggressiveness, and (*c*) saying to us in the experimental situation that one should not hit. Instead of being able to fall back happily on her parents' dictum that hitting was justifiable under certain circumstances, she condemned her own behavior without exception.

Another way in which the child's basic personality patterns was observed to make for greater or less conflict in regard to his aggressive impulses lay in the form in which he tended to express these impulses and the consequent reactions of other children to him. These reactions to a large extent depended not only on the feelings he exhibited, but on the ways in which he exhibited them. For example, Holden, for all his swagger and fighting and his creating of disturbances, won the respect and love of a group of children older and bigger than he. It was partly that they admired anyone so completely fearless; but it was partly, too, that his aggressions were of a kind they could take. These aggressions were straightforward and direct; they were easy to understand. And in all his actions—including his aggressions—were discernible certain personality characteristics which endeared him to other children. Resourcefulness, independence, imagination, a sense of humor entered into everything he did. Antagonisms toward him were never lasting and friendships were readily proffered. His father supported him and his friends supported him. He apparently had no difficulty in accepting at the same time two conflicting attitudes. What he really seemed to feel was what his father and friends seemed to feel —that being aggressive was no particular sin. At the same time his fondness for his mother—and perhaps some latent feelings of respect for the teachers, in which category the experimenter doubtless fell—led him to say what his mother said—that hitting was "not nice." No particular conflict of feeling was discernible. Presumably the amount of backing he received helped him to accept quite happily the fact that different people feel differently—that conflict in attitudes is the order of the day.

A still better example is that of Evan, to be discussed at some length in this chapter. Evan was, in terms of the amount of fighting he did, a less aggressive child than was Holden. But because

of the manner in which he tended to express his aggressive feelings—and, in fact, all of his feelings—he had a much harder time. Superficially, perhaps, he seemed more sure of his attitudes toward aggression than the others. He was the only one of the four who gave the same response at all three-half-yearly intervals. But a review of all his behavior makes it seem more likely that he was using this stock answer as a cover for a tremendous amount of feeling on the subject, feeling which was in part a response to the situation created by his own personality patterns. The following pages will present a picture of how this situation grew up.

At the start of this study Evan was in his third year of nursery school. He had therefore had ample opportunity to make friends and to acquire useful social techniques. As may be seen by his scores on social contacts, however, he was very much less able socially than, for example, Nancy, who had entered school at the same time as he. In fact, through the entire period covered by this study he showed pathetically poor social techniques in many situations.

For one thing, he did not seem to sense other children's wants, even when he was engaged in coöperative play, often managing to do just the opposite of what other children wanted. An occasion of this sort, was noticed in the spring of 1935.

> Kirk and Jerry were playing one day with a wagon full of blocks. Evan came up to them and said something about "ringing a bell." Kirk: *"Who?"* Evan: *"Me."* He watched Jerry and Kirk for a moment, then started to climb up on the blocks. Kirk immediately pushed him: *"No, not you."* Evan: *"Let's . . . and then get a good safe load."* He pushed the blocks. Kirk: *"No, don't knock them over."* A little later he started to put some of the blocks in a box. Kirk: *"That won't take any more."* Evan: *"Yes it will."* Kirk: *"No,"* and took the blocks out again and put them in another box. A few moments later they were piling the blocks up on the wagon again. Evan put one on top of the load, to which Kirk observed, *"That's not safe."* Evan took it down and they tried another arrangement. Kirk: *"That's not safe either."* Evan: *"How do you know?"* Kirk: *"Because the teacher's been telling me."* He arranged the blocks. Evan: *"That's not safe either."* Kirk: *"That is safe."*

The point here is not that Evan was being especially bothersome nor Kirk especially helpful (though he was in general a very co-

operative child). But Evan somehow managed each time to do just the thing Kirk did not want.

The following fall he was still having difficulties. He seemed, for one thing, to use especially poor methods of approach to other children, methods that easily antagonized them. The example was mentioned earlier in which he went to the rings where Nancy and Lila were swinging and said, *"I want it."* When Lila said, *"No, I,"* Evan simply snatched the rings away. To her resistance he responded with kicking her until she cried and let go. (Two days later he tried this with Jerry, but apparently did not dare try kicking him and had to be the one to give up.) On another similar occasion he walked over to the low swinging bar that Thelma and Faith were playing on. Without stopping to take account of what they were doing, he yelled, *"Watch out!,"* swung his feet up over the bar and came down accidentally on Thelma's hand. Naturally such techniques did not win the favor of other children. No more popular were certain other methods of approach. In one case he went up to Jerry and Holden who were sitting on top of a pile of boxes and said, *"Want to see me do a trick? Get off."* Naturally the answer was *"No,"* and Evan left in tears. In another case he approached Philomena, playing with a toy horse, with *"That's broken."* This too, fostered resistance. Some children were able to get away with simply entering others' play without permission, but not Evan. He once climbed up on a table where Jerry and Morris were playing fire, which only provoked them to say, *"We're firemen and you're not."* Almost immediately they walked away and left him.

Over and over he was rebuffed in this fashion, in spite of the fact that on occasion he could and did get along reasonably well, especially with the older boys. The spring of 1936 saw some advance in social abilities, but even at that time (after four years in nursery school and kindergarten) he was still showing instances of exceptionally poor social techniques. He tried to win the attention of a group of children in the sandbox by getting a load of toys from the toy house and carrying them to the sandbox calling, *"Children! Children! Children!"* No one paid any attention. In his play with Jerry and Morris one day, he noticed a clump of earth that Morris was interested in. He said, *"Oh, that's clay, that's a brick,"* picked it up and threw it away. Morris had to chase after it. When

later the teacher said it was time to clean up, Evan went to the sandbox and began to sweep the sand from the ledge back into the box. He paid no attention to the fact that Lila and Bernard were in the box still. Naturally they objected to having their creation suddenly covered with sand. A striking instance of how his poor social abilities tended to affect other children at this time was the following:

> Evan went up to Dick, Frank, William, and Thelma, who were playing in a box, with a shovelful of sand and said, *"Here's food."* Thelma answered, *"We don't need it."* William: *"We need coal."* Dick: *"This is an office, the doctor, we don't need any."* Evan dumped the sand outside the box and Thelma said, *"That isn't the office, it's up there"* (box on top of larger box). William said, *"You can't put coal in there, only in the office."* Dick said, *"You can't even do that."* Evan said, *"I'll put it up in the office. It'll be nice and hot for you."* He then got more dirt and dumped it by the box, saying, *"You could be putting it up with your hands."* Dick: *"It's too much."* Dick and Frank picked up bits of dirt and put them on top of the box. Evan said, *"That's all right."* Frank stepped in the dirt and Evan said, *"Don't,"* then, *"I'll put the dirt up,"* and he shovelled some dirt up. As he lifted it to the top of the box he dropped some and Thelma said, *"Don't."*

One difficulty with his social techniques seemed to be that in almost all situations he appeared very much more interested in himself than in anyone else. He tended to show off to an extreme degree. This persisted throughout the entire period of observation, but occurred most often during the Fall of 1935 period when there was some falling off in his scores on social contact.

> *"Morris, want to see me make a great big kick?"* — *"Want to see a great big throw?"*—this was one form of calling attention to his prowess. Another was in pointing out his accomplishments: *"See what a good turn I did!" "See how I can swing myself!" "That was a* good *kick!"* His efforts to gain attention this way even forced him into prevarications: *"You know, I put this ball in that basket now three times,"* he said to a teacher—a statement which the observer knew to be an exaggeration.

On one occasion he seemed almost crazy with joy, when, in front

of a group, he successfully jumped over a rope. He turned around and looked at them with an expression of wild glee on his face. A little later he was mildly reproved by the teacher for keeping up a running string of comments to another child in the vein of *"You can't do it at all."* One of the less popular of his show-off techniques was that of pointing out his superiority in comparison to someone else. *"I didn't drip any"* (paint), he said once to a teacher who had just been telling the child on the other side of the easel to be careful about dripping. Unfortunately, the teacher could see a number of drippings below Evan's picture.

Naturally, with his exaggerated interest in himself, he usually had very little interest in doing things in the way that other children suggested. He definitely preferred to have things done in his own way. If this was not carried out, the consequences were apt to be severe. *"No patting,"* he said to Holden once when, together with two other boys, they were playing in the sandbox. Holden continued to pat the sand. *"No patting!"* Evan insisted. Holden still patted. *"No patting!!"* yelled Evan. Holden kept on patting. This time Evan raised his shovel above Holden's head as if to hit him. A teacher intervened, and Evan, worsted, remarked to one of the other children, *"We don't care, do we?"* He very often tried to run the show when playing with others, taking the star rôle and 95 per cent of the stage. For instance, Mary and Elsie were once rolling a ball to each other. Evan went up to Mary and said, *"Let the people get it who gets it first."* Mary rolled the ball and Evan immediately ran out and got it. *"I know a good idea,"* he said, *"Come here."* Mary and Elsie moved over close to Evan and the three sat with their feet spread out, forming a circle. For a moment they rolled the ball around in the circle. Then Evan said, *"We'll throw it outside the gate and everyone has to try running and get it."* He threw the ball and—of course—he was the one who got it. He then kicked it to them and walked off. This was one of many similar examples. One day he found another child's rubbers on his shelf in the cupboard. Impatiently, he threw them on the floor, *"Again! Every day!"* Even when he proffered gifts, they had to be accepted according to his fashion.

> *"Who wants the bike?"* *"I,"* replied another child. *"O.K.,"* said Evan, *"put your hat on first."* Another example: *"You could have my pancakes,"* he said to Nancy when they were in

the sandbox. *"Take them with two hands. I'll hold your shovel."* He took Nancy's shovel and she held out her hands for the cakes. *"No, you get out of the sandbox."* Nancy did so. *"O.K., now take it."*

Not only was he inclined to be selfish in wanting things his own way, but in holding on tight to personal possessions and sharing only with great reluctance. When he brought a toy to school, he was willing to show it off, but it required much urging to get him to let another child play with it. For example, he brought a small tennis racket to school one day. He saw Frank pick it up. Immediately he chased after it: *"Don't—oh, let's play. Give me it. I want to do something with it."* He tried to pull it away, but Frank held on. *"Give me it. I brought it to school. It's mine."* They continued to have a tug of war with it, Evan saying, *"Give me! Give me!"* Frank asked, *"Won't you let me play with it?"* Evan: *"No."* Frank then let go, and Evan batted a ball to him with it. One of his most difficult moments came at a time when he changed his mind about a treasured object with which he had been playing. He started to hand a flag to Morris, quite voluntarily, saying, *"Here, you can play with it."* Then, just as Morris got his hand on it, Evan decided he could not part with it. *"I think I want it,"* he said, and tried to pull it back. This precipitated a fight which ended only when Evan said, *"You can only have it if you're going to play dirt with me."*

At the same time that he found it difficult to share his own possessions, he very much wanted to share what anyone else had. The following was a very revealing incident:

> Evan and Bernard were in the sandbox. Evan said to Bernard, *"Your nose is running terrible."* Bernard: *"I have a handkerchief."* He pulled a handkerchief from his pocket and a penny fell out, going through the fence and dropping in the court below. A teacher who was watching said, *"Oh, too bad."* Evan: *"What happened?"* Miss Wilson: *"He lost a penny."* She went off. Evan said to Bernard, *"Let's see."* They both looked down into the court. Bernard: *"That was a bad pity, a bad pity, wasn't it?"* Evan: *"Have you any more?"* Bernard: *"Yes, two."* Evan: *"Give me one."* Bernard: *"No."* Evan: *"Why?"* Bernard: *"I need them."* Evan: *"Please. Please give me one."* For a moment the attention of both children was distracted to something else. Then Evan turned to Ber-

nard again: *"Give me one."* No answer. Evan: *"I'll give you a quarter tomorrow."* Bernard then gave Evan one of his pennies. Evan left him, saying, *"You can play here. I'm going to ride."* He left the sandbox and went over to the sidewalk, took a piece of chalk out of his pocket and began drawing. Bernard came up to him, *"I want one."* Evan: *"No,"* and went on drawing.

He was seldom if ever gentle or sympathetic toward other children. On the contrary, he showed a rather hard-boiled attitude. When Lila pointed out to him that her hand was bleeding, he looked at it casually and remarked in a matter-of-fact tone, *"It's not bleeding no more."* One day he accidentally rammed two grown-ups with his tricycle, bumping them quite hard and toppling off the tricycle.

> They looked around, *"You turned so quickly."* Evan: *"That was funny, wasn't it?"* He started to pick the tricycle up. One of the adults said, *"It was almost an accident, wasn't it?"* Evan replied stolidly, *"Yes, but it wasn't."* He did not seem to sense the fact that the adults had been hurt.[5]

In his great degree of self-interest he showed little interest in others. This could at times be a very annoying characteristic. Dick looked at the cat on the bed and exclaimed to Evan in joy and surprise: *"Look who's on the bed!"* Evan replied in a rather irritable fashion, *"I see. I know it."* He answered in the same way on another occasion.

> Bernard, perched on top of a packing-box, called, *"Look, Evan."* Evan did not even look up: *"I see. I know."* Not only did he show a lack of interest on occasion, but he also tended to be critical of others. On one occasion he watched Jerry painting, *"What are you making?"* Jerry: *"A fence."* Evan: *"A fence don't be like that."* Jerry: (casually), *"Something like that."* Evan: *"An airplane is that."*

He liked to dictate to them. He listened to Lila telling the teacher about how William was disturbing her and her playmates.

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[5]This pattern of *"That was funny, wasn't it?"* was probably a carry-over from a former teacher's attempts to get children to take their own upsets gracefully by encouraging them to laugh about such accidents as this one. See L. B. Murphy's discussion of this situation in *Social Behavior and Child Personality.*

The teacher went over to speak to William and Evan followed. When the teacher finished he added, *"And don't ever talk so loud."*

He did not readily coöperate with other children. For example, when he and William were climbing on the boxes one day, William wanted help in getting rid of an intruder: *"Evan, get this kid away from us."* Evan paid no attention, continued his play. When William repeated this, he said, flatly, *"No."* There always tended to be difficulty when another child wanted to join in his play, especially if the toy did not easily divide in two. Over and over again we saw him squabbling with other children over the picture puzzles. He loved these puzzles and could do them well. He resented interference in his play with them. Here was a typical example:

> Evan had been sitting at a table playing with the puzzle for a few minutes and Thelma was sitting beside him, watching, or occasionally trying to share the activity. William came up, said, *"I'm going to play with the puzzle too,"* and touched Evan's puzzle. Evan said, *"No, it doesn't go there, no, it doesn't!"* and pushed William. The teacher came over and spoke to Evan about his loud voice. William touched Evan's puzzle again and said, *"I'm going to help you."* Thelma handed Evan pieces for the puzzle and they all put pieces in, talking about, *"What goes here?"*, etc. This lasted almost a minute and then as William tried to fit in a piece Evan said, *"No, don't, don't touch it or you'll break the whole thing."* William withdrew his hand and after a short interval Evan said, *"You can't play with it. Get out of here."* William said, *"I can."* Everything went smoothly for about half a minute and then when William tried to fit a piece in Evan took it from him and put it in while William watched. Thelma left and William and Evan continued to put pieces in. Again William tried to fit a piece in, saying, *"Here it is."* Evan responded, *"No, it's something else. You don't know this like I do."* They went on playing, but this same argument came up over and over again, usually with Evan snatching the piece from William and showing him how it should go. At one point they played together with no squabbling for almost five minutes, but that broke up when William said, *"This goes there."* Evan replied, *"No it doesn't. It doesn't! I know better than you."* William: *"I do. You're a pain in the neck."* Evan's rejoinder was, *"You're a pain in the neck."* They went on playing with the puzzle. They had it fitted the wrong way in the box so that there was

not room to fit in the pieces where they really belonged and they kept on squabbling, with William saying that they belonged there and trying to make room for them and Evan saying that they didn't belong because they didn't fit. Jerry came up and backed up what William said, but the puzzle remained the wrong way around in the box. William said, *"It's a boy's arm and goes there."* Evan answered in typical fashion, *"It doesn't go there. Give me it, I'll do it alone."* Evan appealed to the teacher and she showed them how to shift the puzzle the right way in the box and then left. Evan and William played amicably for just half a minute after this situation had been solved before the argument was repeated. William tried to fit a piece and Evan snatched it and put it in himself. He snatched another piece from William but could not put it in, so he put it aside and continued fitting pieces in place while William was content to watch for a couple of minutes. After this short interval of peace, William ventured again to try putting a piece in but Evan snatched it from him. One of the girls came up and told Evan that there was room at the lunch table for him and he said, *"First I've got to finish this."* They finished the puzzle and Evan put it away.

The quoted portion of this record covers slightly more than 15 minutes, and during this time there were only about 10 30-second intervals in which there did not occur some squabbling, including those in which the teacher was helping or in which other children interrupted. William was never allowed to put a piece in the puzzle by himself.

In general, when playing with others he tried to be the center of activity. For example, on a cold February day when there was an icy, slippery crust on part of the playground, Evan was very busy with a sled. Four children were lined up by the fence and Evan was sliding back and forth in front of them, trying very hard to hold their attention. *"Shiny road!"* he would call. *"Shiny road! Everybody out of the way!"* He would then slide across, repeating this over and over as long as they paid attention. If they huddled back in mock fright, he would slide across. If they were busy talking among themselves he would continue to call until they paid attention. There were many similar incidents the following fall.

On one occasion he went up to Bernard, Nancy, and Lila who were playing with the jump rope. First he disposed of

> Bernard by giving him his (Evan's) bike, then he took hold of an end of the rope and swung it, saying, *"Do this way."* Nancy replied, *"No, that's not the way,"* and tried to pull the rope back, Evan: *"Yes, it is."* Nancy: *"No."* She kept trying to pull. Evan: *"Want to see how high I can do it?"* Nancy: *"Yes."* She and Lila held the rope while he jumped. They laughed appreciatively, and he jumped again. Again they showed appreciation. He said, *"I could do it again,"* and jumped a third time. Nancy remarked, *"That was good."* Evan: *"Do it again."* But Lila was becoming restless. *"You hold this* (end of rope) *and I do it."* Evan took it, held it up high. Lila: *"That's too high."* Evan dropped the rope, took the other rope from Lila: *"I'll show you,"* jumping again. Lila: *"Now you hold this and I try."* Again they exchanged. Nancy, now becoming restless, was jiggling the rope. Lila: *"Don't do that!"* Evan: *"Nancy, don't do that."* Lila took a turn, and Evan said, *"Now I'll do it."* Nancy, *"No, I."* She started to jump, Evan dropped the rope and walked away.

He wanted to put all social contacts on his own terms. In doing this he was likely to repulse the advances of other children. Once William saw Evan riding a tricycle and he ran up and tried to attach the handle of his wagon to the back of the tricycle. Evan called, *"I don't like that. Stop! Hey!"* With the help of the teacher, Evan was persuaded to let William do it. He only rode a short distance, however. *"Get that—it's not a good thing to do. Get off 'cause I'm going fast, I'm going to speed. Get off!"* He pushed at William, finally dragging William to the teacher and thus got rid of him. Just the same sort of thing happened on an occasion when Holden wanted to ride on the back of Evan's tricycle.

When he could not get his own way he behaved in a very immature fashion. The instance was quoted before in which he was playing with Phyllis on an inclined board and was very much irritated when he could not get his way. As Phyllis was climbing, Evan said, *"I want to get on."* Phyllis, teasing, answered, *"No, you're not going to."* Evan turned away, talking to himself in a sulky fashion.

Furthermore, he tended, often to the annoyance of others, to excuse himself and rationalize any actions on his part that they did not like. He always had an answer for every situation—sometimes, a very clever answer. He was painting one day, first with red, then

daubed his paper with green over the red. He looked at the teacher and said, *"I'm making a fire engine. Sometimes fire engines be green, don't they?"* Teacher: *"I've never seen one, but it might be."* Evan: *"They went so fast you didn't see them."* The point is that he could not bear to give in on anything, and if he could not win one way, he could always try another—assert his superiority (as shown above) if nothing else worked.

Last, but by no means least, he was very practical minded. He was apt to meet imaginative ideas on the part of others with a disconcerting stolidity. He seemed to lack any real sense of humor which, coupled with this stolidity, made it difficult for him to be accepted readily by other children.

> For example, when Denison, who saw him approaching on the handcar, said, *"This is a boat. You'll get stuck in the river,"* Evan replied, *"It's not a real river."* A teacher who was giving around tomato juice, saw him sitting on his tricycle waiting for it. *"Do you want it on your horse or do you want to get off?"* Evan: *"On the bike. Why did you say horse?"* His sense of humor was limited to verbal absurdities of rather a feeble nature. *"You know how Frank says, 'Bernie Chandler?' He says, 'Bernard Kandler?'!"* Thelma smiled and Henry said something: Evan: *"Bernard Jandler,"* —and a minute later, *"Bernard Tandler."* Henry: *"Bernard Landler."* Evan: *"Bernard Slandler."* Compare this kind of humor with that shown by Nancy, Lila and Grant in their "telephone" play.

Now for the effect of these personality patterns on his place in the group. He was often excluded or ignored by other children. Many really did not seem to like him and kept him from joining their play. They even made fun of the traits that he showed. In the spring of 1935 he did not even receive much respect from Kirk and Jerry, with whom at that time he had as close a tie as with any children.

> One day he went up to Kirk and Jerry, who were pulling a wagon and calling, *"Ice-cream, ice-cream."* *"I want four chocolates,"* Evan said. *"He can't have any, can he?"* Kirk said to Jerry. *"No,"* Jerry replied. They went on, and Evan followed. When he was playing on the same day with Kirk and Jerry, Kirk several times overrode Evan's suggestions. Evan brought a ladder up. Kirk said, *"I know where,"* and took

it from him. Evan, *"Let's have it,"* putting his hand on the ladder. Kirk pulled it away, saying, *"You don't know where."* A little later Kirk and Jerry were on top of the packing box. Evan picked up the ladder. Kirk: *"We don't need a ladder, don't put it up."* Evan dropped it. Then Jerry got down, got the ladder himself and handed it to Kirk. These difficulties occurred with Kirk and Jerry, even though they accepted him in their play more than did any other children in the group.

The following fall Kirk was no longer in the group. Evan gradually worked in with Morris and Jerry, who played together a great deal. Often the three played together fairly well. But even when they got along best, he was very readily excluded by the other two at the whim of a moment. One day he saw Jerry on a tricycle and ran up to him, *"After you, can I have it?"* Jerry, *"No, you're not playing with Morris and me."* Evan: *"Can I after Morris?"* Jerry shook his head. Another time Jerry and Morris were on a table talking about, *"Fire up here."* Evan climbed up on the table. Jerry said, *"We're firemen and you're not."* Evan retorted, *"I could climb up here if I want to."* He got down and said, *"Know where the fire house should be? Under here"* (the table). Jerry and Morris got down and walked off. On another day Evan was watching what Jerry did and Morris said, *"Get away."* Evan stood watching.

Children whom he knew less well tended to ignore or resist his approaches. He went up to Randall who was playing with a ball, *"Can I play with you?"* Randall moved away. Grant called, *"Come on, Randall."* Evan turned to Grant, *"Can I play with you?"* Grant, *"You find another."* Evan, *"There are no more here."* Randall, *"No, you can't play ball."* He went up to Henry who was sitting on a tricycle, *"Can I have it?"* Henry drew back his hand as if to hit him.

Children seldom laughed at others in an unkind way, but Evan was a child who was laughed at a number of times. Once when he was trying his usual stunt of trying to command the center of the stage with a large audience, this happened. *"Everyone get out of the way. Holden, tell everyone to get out of the way. I'm going to do a trick, turn a somersault."* The children stood back and Evan turned a somersault. Holden then tried to do so. Frank shouted, *"Everyone out of the way, I want to show you something."* Evan: *"I can do something better. Everyone out of the way."* Holden: *"I'll show you."* He jumped. Evan continued to shout, *"Everyone out of the*

way." Holden started mimicking him, and laughed. On another occasion, in the playroom, a large group was looking at a bird cage. Evan said, "*You know what you should do—throw the bird cage down.*" He repeated this four times. One of the boys started mimicking him and laughing.

In the spring of 1936 he was still being excluded frequently. He went over to Lila who was trying to pull down one end of the seesaw while Marie sat on the other end, "*I'll pull it down.*" He did so, and Lila got on, saying, "*Thank you.*" Evan: "*I'll get in the middle.*" Marie and Lila: "*No.*" Evan sat in the middle, "*I'll sit here.*" Marie and Lila: "*No. We can go better without you.*" Evan got off. On another occasion he leaned on a packing box, looked at Thelma who was sitting in it, and laughed. Thelma: "*Get out of our house. I'll tell Elsie. Elsie, can Evan play?*" Evan went off. He went up to the jungle gym where Frank and Holden were playing and said something. Frank: "*We're not animals, we're boat men.*" Evan: "*Boat men eat food.*" Holden: "*No they don't.*" Evan stood and watched them.

The result of all this was that even by the spring of 1936, though there were signs at that time of a better adjustment than at any time before, he still had no real friends. In fact, he would even try the use of bribery to win friends. The following was a good example:

Evan, sitting on a box with Nell, said, "*Can I play with you?*" Holden: "*No.*" Evan: "*Why?*" Holden: "*Cause you wouldn't let me have any candy.*" Evan: "*There was only one, so how could I?*" Holden said something and Evan said, "*Tomorrow I'll bring you some.*" Holden: "*How much have you?*" Evan: "*One hundred boxes.*" Holden: "*I got this much at home*" (holds out arms). Holden said to Nell, "*Come on.*" Evan: "*I'll let you play with the football,*" and he gave Holden the ball he was holding. Holden took it to the other packing box.

In spite of the black picture painted above, there were naturally many times when he got along fairly well with other children, even though less desirable personality characteristics continued to be very evident. For example, in the following situation, though there were as usual some difficulties, there was also a great deal of cooperative play. One day Evan, Ben, and Frank were playing in some packing boxes. The boys were sitting inside a packing box which was on top of a larger box.

Evan got out of the box, saying, *"Yum-yum-yum."* Ben repeated. Evan went down a board and Ben followed. Evan said, *"Hey, get some exercise. Here,"* and he went to a board laid across the boxes. Ben came over and Evan said, *"No, me first."* Frank stamped on the board and Evan objected, *"No, don't."* Frank stopped. Evan said something to Ben and hung onto the board, then said, *"Now someone else,"* (to Ben on the board) *"Get down and do exercise."* Frank said, *"Now I must be the big bad wolf and pound on the door."* Evan: *"No, you can't play if you're going to do that."* Frank gave no answer, but looked sulky. Evan, *"O.K., then wait."* He climbed up to the box and said, *"You stay there till I go to sleep."* He got into the top box while Frank watched him. Evan, *"You must say—little Ben and little Evan,"* then, *"Ben, come up, the big wolf is coming."* Ben tried to climb up and Evan watched him. Evan looked around at another group and then said, *"Little Benny, come up on top."* Ben climbed. Evan, *"I'm going to sleep,"* and lay down in the box. Frank got in the box underneath and Ben climbed up. Evan, *"You get in here."* Ben got in with Evan. Evan said, *"Wake him up,"* and crawled out of the box to peek over into the box Frank was in. They all laughed. Frank came out, climbed the board. Evan climbed down the other board and said, *"You can't get me now."* Ben got down. Frank, *"No, I'll be the big bad wolf."* Evan, *"No, we'll two get up."* He went into the underneath box and the other climbed up. Evan, *"You must scrrrrtch at me, O. K.?"* Frank stamped on top of Evan's box. Evan came out, *"You get in the box, I scrrrrtch at you and come out."* Frank and Ben got in the top box. Evan, *"You say 'scrtch-scrtch-scrtch'".* He got in and the others lay on the top box. Evan, *"Say scrtch-scrtch."* Frank and Ben stood up and shouted, *"Scrtch-scrtch."* Evan, *"Come on, you get out now and I run at you."* He ran out of the box. Frank, *"Now I'll be the big bad wolf."* Evan, *"Now Ben."* Frank, *"O.K., we'll have two."* Frank and Ben got in the underneath box. Evan, *"O.K., you stand there but don't scrtch at me yet."* He climbed to the top box, got in, and called, *"Scrtch-scrtch."* The others got out of the box and climbed the board. Evan climbed down the other board and ran away. The others chased him around.

There were also occasions when he was really coöperative and reasonable. When Frank had been pushing him for a while on the handcar, Frank said, *"Let me have a turn."*

> Evan immediately got off and Frank got on. Frank, *"You push me."* Evan, *"O.K."* and did so. Another time he went up to Daniel who was swinging, pushed him and said, *"Want a push?"* Daniel, *"No."* Evan, *"O.K."*, and went off. But these instances of real coöperation occurred much less frequently than in the case of the other children who had had a similar amount of social experience.

What underlay all of Evan's "anti-social" behavior? It is not likely that a child who has as much difficulty in his social relationships as Evan had would have much real self-confidence or feeling of security. In fact, one might say that almost everything Evan did was a mark of insecurity. He boasted and showed off, probably primarily to make up for this feeling. More directly, he showed the same feeling in occasional open expressions of inadequacy. *"I want someone to throw it* (the ball) *in the punching bag,"* he said to the teacher one day. The teacher answered, *"Do it."* Evan, *"I can't."* Teacher, *"Try one of the little balls."* Evan tried, *"See, I can't do it."* A marked and frequent evidence of this feeling lay in his pathetic attempts to win prestige and to win love. Boasting and showing off fit here, but there was even more direct evidence for assuming this need for love to be a basis for his behavior. In many cases he directly asked for it—with varying responses to such demands. Early in the spring of 1935 he had been absent for a time with a cold.

> When he returned, he went around from child to child, saying, *"You glad to see me back?"* The next day Bernard came to school, saying, *"Today's my birthday."* Evan, *"How old are you?"* Bernard, *"Four."* Evan, *"Tomorrow is my birthday"* (not true). He ran around saying this. Carter said, *"Hey, it's my birthday. I'm having one, too."* Evan, *"I, too,"* and continued singing, *"Tomorrow is my birthday, who wants to come to my birthday tomorrow?"* He went up to Sammy and said, *"Want to come to my birthday tomorrow?"* Sammy, *"No."* He went up to Denison, *"Want to come to my birthday tomorrow?"* Denison, *"Holden took my birthday."* Evan, *"Why?"* Denison, *"We don't need a birthday."* A few days later he heard a teacher telling Morris they had missed him during his absence. Evan, *"I had a cold. Did you miss me?"* Morris came up to him once and said, *"I'm going to play with you, huh? Shall I play with you?"* Evan, *"Yeah, let's play we*

don't like anybody else." When he played the piano, calling, *"Everybody dance,"* no one got up to do so. He turned to the teacher and said sadly, *"Nobody dances when I make music."* Another way of appealing for love was to do something especially nice for another child. Unfortunately, such attempts were generally somewhat inapropos. They were usually ignored. An example was getting a shovel and giving it to Nancy, who was playing in the dirt. She took it without comment. Appeals for appreciation continued through the spring of 1936. *"Are you my best friend? Do you like me best?"* he asked Nancy. *"I'm going next to you again,"* he said to Lila when they were taking their coats off. *"I'm going near you again."* *"I like you,"* said Lila. Bernard, *"And I like you."* Evan responded warmly to this barrage of love: *"I missed you on my birthday when I was five* (a few day before) *but my mother invited only French people, not English. I'm sorry. Next time I'll invite only English people."* He was playing one day with the bells, while several children waited for a turn. He called to Carol Ann and Marie, *"You like this music?"* Marie, *"Yes."* He turned to Randall, *"Do you like my music best of all?"* Randall, *"I haven't heard it."* Evan, *"Do you like mine better than all the rest? Do you like mine?"* Holden, *"No."* Randall, *"Nobody's but Holden's and Henry's and mine."* Evan, to Bernard, *"Do you like mine?"* He appealed to the teachers, too. *"I put my shovel real good,"* he said, when they had been putting toys away. The teachers said, *"Im glad you remembered."*

This insecurity ties up directly with the degree of his aggressiveness, just as was true with Lila and Holden. Just as they did, he showed it in going to pieces easily when his personal integrity was threatened, and in flying off the handle with what seemed like slight provocation. The incident was mentioned before in which, when playing ball with Wallis, he flew into a fury because Wallis started kicking the ball around. He raced after him, yelling and crying, and in general extremely upset. He showed the same reaction when Wallis took hold of the handlebars of the tricycle Evan was riding. In the fall of 1935 there was the same reaction to Jerry's and Holden's refusal to get down off some boxes when Evan commanded them to do so. When William tried to move a board they were playing on, Evan said, *"No, we need it like that."* William, *"Well, I want it up."* Evan, *"No, we were here first!"* He picked up a

ball and flung it furiously across the room. There was the incident, too (mentioned above) when he turned and furiously hit at the nearest child because his tricycle had been accidentally knocked over by another.

At the same time, however, a certain timidity and an inability to hold his own in conflicts, both further signs of insecurity, tended to decrease his overt aggressiveness so that in actual score he was neither especially high nor especially low in this characteristic. His timidity was probably what led him so often to call on a teacher for help—an action not appreciated by other children. For example, Frank, who was pushing him on the handcar, pushed him up to a large packing box in which Holden and Morris were playing. Holden pushed at the car, *"You can't come in our house."* Evan answered, *"We don't want to."* Morris, *"Knock it all over"* (the car). Holden kicked the car. Ben came up on a tricycle and Evan said to him, *"He's — — away."* Ben said something to Holden and Holden picked up some dirt as if to throw it. Evan, *"I'll tell the teacher."* Evan called, *"Miss Price."* Holden went to the back of the box to get some more dirt. Ben and Evan then changed their means of conveyance and Evan rode away.

To return now to the question of attitudes toward aggression as related to the ways in which a child tends to exhibit aggression. We were dealing here with two different situations, one growing out of the other. The first related to home relationships. In Chapter III we told about the attitude of Evan's parents toward his hitting. Though both parents had expressed to him the feeling that in general hitting was not a good idea, they had at the same time expressed quite emphatically to him their feeling that he should learn to hit back. This same attitude was what Evan expressed to us at each experimental session. We feel, however, that a very important factor in the situation was one which came quite incidentally in both the interview with the parents and in the last experimental session. This was his relationship with his baby sister. The mother told us that special rules had had to be made with regard to Evan's handling of her because earlier "he had been quite rough with her." Our feeling is that this early "roughness" was significant. It seems to us very likely that not only had there been at that time a good deal of jealousy—hence hostility and aggression—toward the sister, but that this hostility was still as strong as ever. Only its form of

expression had changed. His mother told us that she came into Evan's room one day to find him savagely beating up his toy rabbit with a long stick. What is most important, however, is that this feeling was carried over into the other situation—his social life at school. The bragging and showing off, the constant asserting of his superiority in one way or another, were probably other ways of showing this latent hostility to his sister. He expressed aggression in direct forms only when his feelings were so intense that he had to—the rest of the time he tried to abide by parental rules and not hit. It was unfortunate that it should come out in the ways it did. No way of expressing one's feelings of resentment is apt to be welcomed by other children—but bragging and showing off are perhaps the least popular means. The others in his group seemed to be completely cold to such behavior. They on the whole reacted to him with an attitude of lack of interest, which is a good deal harder on a child than is open hostility. The ways in which he expressed his aggressive feelings only deprived him further of the love he needed. If, like Holden, personality characteristics had been attractive enough to overcome this difficulty, it might not have been so serious. But apparently they were not. His personality was not sufficiently vivid. Though he engaged in imaginative play, it was on the whole pretty stereotyped play. He seldom had anything new and interesting to add to it. His sense of humor did not by any means measure up to that of other children. It did not have the flare and piquancy that is generally so true of children's wit. His general air of stolidity rather held off than attracted other children. All of these aspects of his personality added together made a happy social adjustment in the group a very hard job. First of all he brought to the situation a strong feeling of rivalry with other children owing to the rivalry situation at home. He brought with him, too, a very great need for a feeling of importance and for prestige. He was tremendously handicapped, it seemed to us, by the fact that, first, these attitudes were expressed in a form likely to repulse rather than attract other children and, second, because his personality in general was not sufficiently interesting to overcome the first handicap.

How is this related to Evan's attitudes about hitting? Our feeling is that his pretty mechanical repetition of what his parents had pointed out as acceptable behavior was a mask for a good deal of feeling on the subject—so much feeling that he had not been able

to think about it at all and hence to verbalize it. This, of course, we cannot be sure of. We did not have sufficient opportunity to lead him to a more genuine expression of feeling to us. We can, however, point to the very significant fact that in the experimental situation, in spite of his fairly casual hitting of dolls with dolls, he refused to do so when it came to the point of hitting a doll with his baby sister's name. There must have been very strong feelings about her. The earlier behavior toward her that had created the need for special parental dicta was indicative of strong resentment toward her. Parental dicta had succeeded in changing the behavior but could not have changed the feeling. On the contrary, they would tend if anything to create strong feelings of guilt about hitting. Whatever his real attitudes toward aggressiveness were, they were pretty well concealed. And it is our hunch that the concealment was due to these feelings of guilt over the primary home relationship. The secondary relationships—those with the other children at school —might have been able to bring gradually a shift in feeling about aggressiveness had they been satisfying relationships. But here his personality got in the way and no shift in attitude (as happened in Nancy's case) came about.

VI. THE RÔLE OF THE TEACHER IN THE FORMATION OF ATTITUDES TOWARD AGGRESSIVE BEHAVIOR

The practices and "techniques" used by the teachers of our subjects in dealing with instances of aggression between the children and the attitudes toward aggression which the teachers tried to instill in the children were based on a very definite teaching philosophy. These teachers were interested in helping the children achieve a feeling of independence and self-assurance and at the same time to acquire social abilities which would enable them to get along happily with other children. With regard to aggressiveness proper, this meant the rather difficult task of fostering in the children adequate means of self-defense from others' aggressions, but at the same time teaching them to curtail as far as possible all overt physical aggression. The head teacher of one of the groups put it thus: "I want them to learn that they have a voice to use in settling difficulties with other children—that other children do not understand when you hit and so you must learn to talk to them instead." On the other hand, she said, there were occasions when hitting seemed justified. This especially applied to hitting back. In such cases the teacher said nothing to stop the child from doing so. She also felt that if a child were especially weak on his defenses in cases of physical aggression, she might encourage him to use physical means of self-defense. But by and large, her primary aim was that of leading children to use voices in place of fists. In this same interview we told her of Nancy's responses to the experimental situation—her refusal to hit dolls with dolls and her upset at the suggestion that she do so. The teacher felt that Nancy was in this situation showing a characteristic level-headedness. She felt that in general Nancy was an extremely well-adjusted child, with "her head well set on her shoulders." Nancy's responses to our suggestions and questions, she said, were what she would have expected from such a child. She hoped that the other children would acquire as good a perspective on the problem.

The teaching philosophy expressed above did not carry as much weight with the children as apparently the teachers expected. The teachers exacted of themselves the same consistently calm level-headedness that they wanted the children to learn. Their philosophy demanded of them a highly objective and impersonal relationship

with the children. But it was our feeling that their fundamental fondness for children belied the strictness of attitude toward aggression which they tried to show. However the children behaved, the teachers fundamentally accepted them—and the children responded to this fundamental feeling more than to any techniques the teachers tried to use. They might rebel against the momentary imposition of discipline. They might try to behave in a way to win the teachers' approval. But as there was this undercurrent of interest and liking and acceptance, they did not really have much to worry about. The aggressive children continued to be aggressive (witness Holden's behavior) and all of them seemed to show only mild feelings of guilt with regard to teacher attitudes alone.

Responses to repressive teacher "techniques" became therefore temporary responses to a series of discrete incidents in which the teacher tried to put her philosophy to practice. This made it hard for the teacher. No teacher could see every act of overt aggression that occurs in a group of 20 children. She can only deal with what catches her eye. If she misses an incident entirely, or comes onto the scene too late to see for herself the issues involved, there is just that much lost by way of direct application of her principles. Much goes on that escapes her eye altogether, and a very aggressive child who engages in much physical combat "gets away with" a good deal. This would make no difference were she fundamentally as disapproving as these teachers tried to be. But they had gone into teaching because of their genuine fondness for children. Afraid as they might be of letting themselves into the secret, their fondness and interest consistently won over their more objective philosophical aims.

An examination of the children's responses to the techniques used showed that this was the case. Repressive, disciplinary techniques made very little inroad on the children's feelings. They would capitulate for the time being—and a little later start all over again. Positive techniques, aimed at helping the child with his difficulties rather than reproving him, carried much further. Let us see now more specifically what some of the techniques were and how the children responded.

The three most frequent techniques used by the teachers in handling conflicts between children were: (*a*) Making some suggestion: suggesting some other idea for play, a better way out of the difficulty, or other means for the child's getting what he wanted; (*b*)

getting the child to settle the conflict by verbal means; (*c*) removing the aggressor from the scene of action or excluding him from the group. Others which occurred less frequently included the following: pointing out to the aggressor that he is hurting the other child; expressing to the aggressor the wants of the child he was attacking; talking about something else; telling the child to make restitution; pointing out the consequences of his action or telling him that he deserved the retaliation he got; and a few cases of frank *"don'ts."*

Immediate responses to teacher techniques varied as indicated above with the kind of techniques used. This was especially true when suggestions of one sort or another were made by the teacher. The more the suggestion directly led to a satisfaction of the wants and needs of all parties to the conflict, the more likely it was to be accepted and carried out with alacrity. It is difficult, of course, to obtain a settlement which is equally satisfactory to all parties. Those which seemed to be most satisfying to the children, however, were those which directly took into account the desires of all parties and helped to satisfy as many of these desires as possible. One of the best examples of this compromise technique occurred in a conflict between Holden and William. William had been pulling Holden in a wagon and then, much against Holden's wishes, he pulled the wagon into a packing box. Holden proceeded to corner William in the packing box and beat William's face with both fists. The teacher, who had obviously not seen the start of this conflict, came up to ask what the matter was. Holden explained, *"We're street cleaners and he takes it* (the wagon) *in the house and we don't want him to."* The teacher said, *"It* (the box) *isn't big enough, is it?"* William looked at it and pushed the wagon out of the box. The teacher then suggested that if they got some long boards and leaned them against the packing box the space between the boards and box would make a very adequate garage. She suggested that they help her get the boards. This the boys did, apparently with eagerness. With the garage built, they went happily on with their play. At no time did the teacher mention the fact that they had been fighting. There was no disapproval—and a warm response.

We felt that the value in the way the teacher handled this situation lay in her active help and coöperation with the children. Very often teachers attempted to be helpful and coöperative in the same way, but it was not always easy to satisfy wants in as clear-cut a

fashion. Perhaps the difficulty was that the children's wants were too often what the teachers did not want. This was especially true in rivalry situations where a gang would "go at" another child just for the fun of doing so. When the teacher tried to turn this activity into a similar but "more acceptable" channel it was rather difficult. The children were none too willing to accept her suggestions.

A particularly good example of this stubborn persistence was the victimizing of Nell by a gang, of which the following situation was typical.

> Nancy, Grant, and Lila were playing in the gymnasium and Nell was near them. Nell came over and sat on the mat on which Lila was sitting. Lila said, *"No."* Grant pushed Nell and said, *"No, you don't sit here."* Nancy pushed Nell and said, *"No."* They all sat still for a moment, then Nancy pushed Nell off the mat. Nell got on again and Nancy pushed her off again. Nell hit Nancy. Nancy said something to Lila and Lila put her feet up on the mat so that Nell could not sit down. Nell went off. . . . Lila looked across the room at Nell and said, *"Oh, she's going to sit here!"* Nancy, Lila, and Grant all put their legs up on the mat. Lila lay down on it and Nancy followed suit. Nell came over and Grant said, *"Nell has no place."* Nell sat down on the mat next to them. Nancy pushed her, then said, *"OK, you can lie on that one but not on this."* Grant sat by Lila and Nancy, then went over and sat by Nell. Lila said to Grant, *"Sit up on Nell."* Nell rolled off her mat. Grant rolled off, and Nell got on again. Lila said, *"Oh, Nell's on again!"*—etc., for some time. Finally they began chasing Nell around the room, always running back to the mats if Nell got near and kicking and pushing her if she tried to get on. Most of it was accompanied with much excitement and laughter. For them, it was a great game. But it became too wild and noisy and the teacher felt she should do something about it. Her first technique was one of showing disapproval without actually calling the issue. *"Too much running around. What kind of game were you playing?"* Lila recognized the disapproval: *"Tag."* Miss Wilson: *"We don't play that here. Let's think of something else."* This meant a decided change of activity and was not an easy problem. The three children (Nancy, Nell, and Lila) stood, saying nothing. Miss Wilson said, *"Is Grant playing with you? Let's wait for him."* Grant came up and Miss Wilson said, *"We're thinking of some quiet*

game to play." Lila volunteered: "*House.*" Miss Wilson: "*How will you play?*" Grant: "*Just three play.*" Miss Wilson recognized this as the crucial issue: "*Won't you let Nell?*" Lila: "*No.*" Nancy was more coöperative. "*Yes, she could. She could be our friend who lives next door.*" Lila: "*Yes, she could be our friend.*" Nancy: "*Or our sister.*" Nell has temporarily become a member of the family. Lila: "*Or mother.*" Nancy: "*Or cousin.*" But feelings toward Nell were still the crucial issue and Lila could not keep up her end. "*No,*" she said, "'*cause she sucks her thumb.*" (This was an old score put to use frequently in trying to put their rivalry with Nell on a reasonable basis). Miss Wilson: "*Not always, just sometimes. How would you like it, Nell?*" Nell: "*To be the cousin.*" Miss Wilson: "*And live next door?*" Nell: "*Yes.*" Miss Wilson: "*Do you want to play on the mats?*" All four children went back to the mats. For the present the rowdiness was over.

But since their game had been one of plaguing Nell and not of playing "tag," it was not long before it flared anew. The mild and indirect reproof of their behavior had brought only a temporary lull in overt rivalry, none in underlying feelings.

Frank and direct disapproval carried little more weight. In another instance, Nell was taking an active part with the "gang" against someone else.

Grant said to Nancy, "*Let's tear someone down.*" Nancy: "*Yes.*" Grant said, "*There she is with her hat on.*" They ran off and Nell followed. They ran up to a group of children including Thelma. Grant said, "*Here they are.*" All three shoved and pushed Thelma, Nell the hardest and Nancy doing more threatening than actual pushing. They then stood back and looked at Thelma. Grant said, "*Tear her coat down.*" They stood and looked at her. Nell pushed Thelma; Nancy and Grant watched and then both gave her a little shove. Grant said, "*She can't fight very well.*" Thelma began to cry, hit back at Nell and then hit Nancy. Nancy laughed and said, "*She fighted me just a moment ago.*" Thelma cried and hit out at her. Miss Wilson came up and said, "*Do you know how that feels?*" Nancy: "*Yes, 'cause she punched me and it didn't hurt. She punched me on the arm.*" Miss Wilson: "*Don't punch any more. Could you invite someone to play with you?* Grant. "*No.*" Miss Wilson: "*You mustn't be so rough.*" Grant: "*We'll make her cry until years.*" He ran off and Nancy followed. Grant wanted to go right back and

start over again but Nancy would not let him. Later, however, it was resumed.

Presumably it was the lack of reproof which rendered successful another technique—that of ignoring completely the fact that a fight was in process, and of making a suggestion which had nothing to do with the immediate situation. The following was a good example:

> Holden was playing in a box. He lay down on a board there and William climbed in onto the board. Holden said, *"Stop! This is my bed."* He kicked at William, saying, *"Get off my bed!"* .William stayed where he was and Holden continued to shout, *"Get off my bed!"* Miss Wilson came over and said, *"It will be time to go in in three minutes. You could take the blocks and ladders back to the garage."* Holden and William got out of the box and started carrying the materials to the garage.

Techniques which emphasized the children's dealing with difficulties verbally seemed, in terms of the immediate response of the children, to be only moderately successful. We felt that on the whole the children had very little interest in putting conflicts on a verbal level and felt themselves that on the whole it did not get them very far. It was not so much that they were not able to verbalize their wants. When called upon to do so they could do it very adequately. One case in which a child, when he expressed his want to the teacher, was asked, *"Why didn't you say it?"* ended in recriminations on both sides. One of the children said it was impossible to explain to the other because he was such a baby, and the other naturally retorted with, *"You're a baby, too."* This led into a broader field of mutual recrimination with, as far as we could see, the situation more mixed up at the end than it had been at the beginning. In another instance, the teacher's suggestion that a child explain to the other what was wanted was acted upon. The explanation was made and the child got what he wanted. But a moment later the same conflict repeated itself, ending in the same child's being told this time that he had had his chance, and that was that. Since, except momentarily, he did not achieve what he wanted by his verbalization it is doubtful whether he could be much impressed by its value.

Very often such suggestions on the part of the teacher could not be carried out. Nancy, for example, got into a difficulty which she

could not solve alone and ran to the teacher for help. The teacher's response was, *"You should talk to him, not to me."* Nancy nodded understandingly and ran back to the scene of action. Before she got back the conflict had settled itself. Actions had proved louder than words. Another example is the following:

> Frank started to take a wagon near where Evan, Jerry, and Morris were playing. Evan went over and pulled at the wagon, saying, *"We had that first. We need it."* Jerry said, *"We had it first,"* then said to the teacher, *"He took it without asking."* The teacher replied, *"Speak to Frank about it."* But Frank had already gone away, leaving the wagon. The mere presence of the teacher was more efficacious than anything else.

Perhaps the main difficulty about attempts at verbalization is the teacher's apparent assumption that this is the way of making it very clear just what the aggressor or the victim wants. But usually before the teacher can suggest anything, the child on each side knows perfectly well what the other wants. He has already been told in a more dramatic way, and at this point that is not what is bothering him. He is looking for a way out, not for more expression of feeling. This is a further reason why the teacher's coöperation in actively helping attain a solution seems to be more realistic and more successful than verbalization.

The technique of removing a child from the group is not easily measured in terms of immediate response. Certainly it stopped the conflict, but that was not what the teachers were really driving at. In general, it seemed to have the same influence as all other techniques of reproof—momentarily it stopped a fight. But attitudes of real reproof were not deep enough to prevent the fight's starting again later. Holden, the most violent fighter, was most frequently excluded. But he kept right on fighting.

Now for more general responses to teacher techniques. We have pointed out that the children did not seem to experience strong feelings of guilt or conflict as a result of teacher attitudes alone. They sensed too well the teachers' fundamental acceptance of them. At the same time even mild feelings of guilt, coupled with a natural desire for the teacher's approval, will bring some redirection of behavior. This is especially true of children whose feelings of guilt are reinforced by parental attitudes. They must avoid feeling guilty;

they must win love and at the same time must have some outlet for aggressive feelings. The last is the difficult part. The solution seems to work according to the very simple principle that if a child cannot get what he wants in one way, he will try another. If he cannot express his aggression in one way, he will express it in another. If he cannot satisfy his wishes and wants in one way, he will try another. In the case of each of these subjects there was a direct relationship between the extent to which the child had been restrained from exhibiting overt aggression and the extent to which he found other less direct means of expressing it. (The restraint was naturally largely of parental origin. It was reinforced, however, by the teacher practices and in school the teachers functioned as substitute parents.) Indirect means of expressing aggression consisted in either (*a*) obtaining vicariously the satisfactions inherent in expressing one's feelings of aggression, or (*b*) in putting acceptable social techniques to use in accomplishing the same ends that would have been won by direct physical (or verbal) means. Holden, who always took the most direct path to the achievement of any satisfaction—physically or verbally—was seldom seen to use these less direct means. Nancy, especially in the period when she was very timid and showed little overt aggression, used them frequently. Lila and Evan used such means over and over, apparently in attempts to win prestige and popularity.

The verbal acceptance of teachers' precepts, along with full enjoyment of activity which they condemn, is repeatedly shown. One familiar pattern is vicarious satisfaction of aggressive feelings by taking sides in a fight. Nancy, observed during the period when she was especially timid, appeared to be finding immense joy in identifying herself with the victor in a heated battle between two boys. Unconsciously she mimicked the body movements of the victor and rejoiced in his reducing the other child to tears. She had been watching Carleton build. Charles ran up to Carleton and, for no apparent reason, pounded him on the back, then turned around and started to run away. Carleton chased him, while Nancy stood watching. She laughed excitedly, *"Now he caught him!"* Carleton hit Charles and Charles began to cry. Nancy (generally a rather sympathetic child) laughed again, *"Now he cries!"* She then ran to the teacher who was intervening, *"First he hit Carleton."* With the teacher's reproof of Carleton's and Charles's behavior, she returned to her usual pattern: *"We don't*

hit, we never do, and my father and mother remind me." Nancy also showed her pleasure in the aggressions of others in praising them for their victories. "*Good for you, Morris,*" she said, when he had snatched a scoop from Nell. "*You were a good strong person.*" This is full rejection of teacher's attitude along with full compliance when a head-on collision with teacher precepts is involved.

A more frequent method of carrying out one's aggressive desires without having to take a direct part in it, thus keeping clear of teachers' disapproval, was that of asking another child to fight one's battles. In this way the victory could be won without having to entertain any personal feelings of guilt about it. The following were typical examples:

> Frank was trying to wrest a tricycle from Evan. Evan called to Bernard, "*Get that kid away.*" As Bernard tried to help, Evan called, "*Morris, I need help. Get that kid away.*"
>
> Lila and Nancy were on the see-saw. Sally was pushing on it at the middle. Nancy said to Phyllis who was playing near by, "*I don't want any more pushing. Get that kid off.*"
>
> Bernard tells Nancy that Dick has taken one of her tiles. Nancy says to Dick "*Give it to us.*" William, who is sitting beside Nancy reaches toward Dick for it. Nancy says, "*Would you give it to us from him?*" William pulls at Dick's hand, while Nancy watches. Nancy reaches toward Dick, then withdraws: "*Open his hand for us.*" William: "*I'll break his fingers off, that's the best idea.*" He gets tile from Dick and gives it to Nancy.
>
> Nell hits Lila. Lila cries and yells for the teacher. Randall, near by, says, "*I'll give her a whack.*" Lila: "*Yes, give her a good whack.*" She laughs. Randall chases Nell around. Nancy laughs, "*Give her a good whack.*" . . . After half a minute Nell returns. Lila says to Nancy, "*Give her a whack. I'm going to get Randall to give her a whack.*" Nell runs off upstairs and Nancy and Lila follow. They find her in the dressing-room, laugh and say, "*Give her a whack. We'll find Randall to do it.*" (Neither child touched her at all).
>
> Randall hits at Lila. Lila calls, "*Grant, get him off.*"
>
> Lila tells Bernard about Carleton's having hurt her flower. She says to Bernard, "*Go fight him.*" Bernard: "*Get Holden to do it.*"

Getting others to do one's fighting sometimes had a double value: it satisfied one's feelings of aggression and at the same time could

take care of situations which needed some attention. There were other ways, too, of taking care of such situations without having to resort to overt aggression.

One could thus always make use of those social patterns which were obviously *acceptable to all adults.* One of these very useful patterns was to offer or promise another child a gift in order to get something in return—in other words, bribery. This was used especially often by Evan. In the last chapter was quoted the incident in which he got a penny from Bernard by offering to bring him a quarter the next day; also when he tried to get Holden down from a box on which he wanted to sit by offering to bring some candy to school for him. Among other incidents were the following:

> Evan goes up to Dick who has skates on and says something to him. Dick says, *"No."* Evan: *"You can have my bike."* Dick: *"OK."* He gives the skates to Evan.
>
> Evan went up to Nancy, Lila, and Bernard who were playing jump rope. *"Lila want the bike?"* Lila: *"No."* Bernard: *"I do."* Evan gives it to Barnerd and takes Bernard's end of the jump rope.

Nancy used bribery, too, though not so often. When playing in the sandbox, she twice tried to get favored toys from other children in this way. On one occasion she said to Marie, *"Marie, if you give me the strainer, this cake will be for you."* On the other occasion, she first asked the children who were using scoops if she might use one. They all refused. She then took her strainer over to Bernard (who had a scoop) and said, *"You take this."* Bernard, obviously knowing what she wanted, would not yield his but gave her another opening: *"If Arlene* (who had a scoop) *doesn't give it to you, I'll take it away."* Arlene countered by giving her scoop to another child and Nancy only got one when Bernard lost interest in his. Here, in a teacher-supervised world, is a well worked out pattern of coercion of others, which the teacher cannot control.

Both Nancy and Lila were more apt to make use of another very acceptable social pattern upon which teachers had insisted: taking turns. If two children wanted the same toy, the one who did not have it could say, *"Let's take turns,"* meaning, *"Give it to me,"* while the child who had it could use the same words to mean, *"You can't have it."* Nancy tried this pattern on Arlene when, in the incident above she could not get the scoop. *"We'll all take turns,"*

she said to Arlene—but unfortunately did not win. In one rather long incident she and Lila used it on each other until Lila had to break down and come right out with what she wanted. It started with their both wanting a brush with which to sweep the ledge of the sandbox. Nancy was a little quicker in finding and obtaining possession of the only available brush. Lila fretted around for a few minutes while Nancy swept.

> Then she approached Nancy: *"Now, Nancy, I want it."* Nancy: *"No, let's both take chances and pretty soon I'll give it to you."* Lila watched her a moment, then went off and soon was having a very happy time with Nell, running up and down the slanting side of the sandbox near Nancy. Nancy looked at them several times, obviously interested, finally went up to Lila. *"Lila, now it's your turn."* Lila took the brush and Nancy immediately took Lila's place in the game with Nell. After a short interval they grew tired of the game, went over to play on the see-saw. Now Lila was becoming restless. She came over to the see-saw with the brush and held it out to Nancy. Nancy: *"I don't want any more turns."* Lila: *"Well, I want you to, 'cause I want to see-saw with Nell."*

In similar conformity to adult rules, a very convenient way of getting a child out of the way was to warn him that he might get hurt if he stayed where he was (said, of course, quite sympathetically):

> Lila and Nancy are playing on the see-saw. Nell comes up. Lila says, *"No, Nell, you can't get on."* . . . A moment later Nell leans against the see-saw. Lila: *"Nell, don't touch it, you might hurt yourself."*
>
> On another occasion Lila and Nancy were on the see-saw and Nell was holding it at the middle. Nancy said, *"Watch out for your fingers."* Lila: *"She's just touching the end. That's all right."*

You could, of course, actually knock the child out of the way, warning him at the same time. Lila, climbing down the jungle gym, bumped Nancy: *"Look out, 'cause I'm getting down here. You might hurt yourself."* Similar was Nancy's use of a helping-hand pattern in an attempt to get a handcar away from Lila. Lila was holding on to the handcar while drinking her tomato juice. Nancy asked to use it until Lila was through. Lila: *"No, I want to keep it."* Nancy: *"Janet might grab it and that wouldn't be so good 'cause you wanted it."*

Last but not least a child could call on the authority of standard group rules. A dramatic instance of this kind was the following:

> Wallis rode past Evan on his tricycle calling, *"Aha, I've got the new bike."* Evan: *"I'll get the other one."* Wallis: *"No, it's broken."* Evan went into the toy house to look, and Wallis got off his tricycle and followed, repeating, *"It's broken."* Evan went to the tricycle in the toy house, looked at it (the handlebars were off). Then he ran out of the shed and grabbed Wallis's tricycle. Wallis ran up, took hold of it and squealed. Evan said, *"When somebody leaves it somebody else gets it."* He rode off.

Probably neither teachers nor parents could have anticipated that children would find such excellent and available means of attaining satisfactions. Teachers, by adhering to their principle of getting children to use voices instead of fists, were receiving returns but not always in expected ways. Voices were used in a very much cannier way and to much better advantage than the teachers were aiming for. Some children were learning to drop out overt aggression. They were also learning many useful social patterns. But overt aggression was being dropped with no other equally straightforward substitute for satisfying feelings and desires; social patterns were put to use as means of aggression. Had our experimental situation carried further than only the question of hitting, many strange odds and ends of attitudes must have turned up—such as, for example, though committing murder is on the "bad" side of the ledger, commissioning someone else to commit one's murders might well be on the "good" side.

It seems unnecessary to multiply examples of a general principle which is evident in the daily conduct of these children, namely, that aggressiveness goes on continually in guises which protect it from formal disapproval; indeed, that the adult rules framed in the language of non-aggression are here seen constantly employed for aggressive purposes.

VII. SUMMARY AND INTERPRETATION

1. *Summary*

The *purpose* of this study was (*a*) to discover the attitudes of nursery school children toward physically aggressive behavior; and (*b*) to discover how and in what ways the child's experience in nursery school affects the formation of these attitudes.

The *subjects* used in this study consisted of six children who had been under the investigator's observation since their entrance into nursery school at the ages of 18 months to two years. The choice of subjects was based entirely on the length of time they had been under such observation, since the nature of the problem demanded as detailed and careful analysis as possible of each subject. At the time this study was begun the six children ranged in age from 3 years, 1 month to 3 years, 9 months and in *IQ* from 100 to 135. All came from homes of superior socio-economic level.

a. Methods.

(1). Observation of each child's activity during free play periods on the playground. These records were taken at approximately six-month intervals at three different periods. In the first period, records on individual children were spread over a 4 to 9 weeks' period, each record being from 5 to 30 minutes in length. In the last two periods each child's behavior on the playground was recorded on five consecutive days, for one hour each day. A total of 12 to 15 hours of direct observation material was obtained on four of the six children, these four being the main subjects of this investigation. The purpose of the observations was to obtain at each of three periods an adequate cross-section of the child's behavior and attitudes at that time.

(2). An experimental situation was devised for the purpose of obtaining the children's verbalizations on attitudes toward aggression. In the first period, pictures were used in order to stimulate conversation. These were discarded in the last two periods for a play situation in which boy and girl dolls were set to play in a "playground" made of blocks. Questions concerning the child's attitudes were then based on his play with the dolls. This experimental situation was presented to each child at each of the three periods on the day before his playground observations were begun.

(3). Interviews were held with parents and teachers of the children in order to determine their viewpoints about aggressiveness; what they themselves believed in and what they were trying to teach the child.

(4). Material which had been collected for three earlier studies on these same subjects was available. This material is not used directly but serves as a background for some of the material secured for this investigation. The same is true of observation records obtained by the writer during previous years on the various nursery school groups to which these children had belonged.

b. Findings.

(1). *Attitudes toward aggression as expressed verbally in response to direct questioning by an adult (experimental situation).*

(*a*). Questioning by an adult with regard to the "rights" and "wrongs" of aggressive behavior elicited responses which appeared to be largely a direct representation of parental attitudes and of the rules imposed by parents at home.

(*b*). In some instances, these responses shifted rather readily with changes in the experimental situation. These changes in response seemed to be part of a tendency for the children to identify themselves with the dolls used in the play. Abstract judgments of "good" or "bad" behavior were therefore changed when the doll (i.e., "the child") was placed in a situation which demanded a different kind of response from that represented by the abstract judgment.

(*c*). There was a tendency to exhibit a strong emotional response to requests for behavior definitely contrary to parental rules.

(*d*). No consistent developmental trend in verbal attitudes appeared in all six cases in the year and a half during which they were studied.

(2). *Relation between verbal attitudes toward aggression and aggressive behavior toward other children.*

(*a*). There appeared to be no consistent relationship between what the children had to say about the "rights" and "wrongs" of aggressive behavior and the degree of aggression shown by them toward other children on the playground.

(*b*). The lack of such a relationship suggested the need to study the various factors in the child's social experience operating on both attitudes and behavior, in order to explain the apparent discrepancies between them.

(3). *Factors influencing the formation of the child's attitudes toward aggression.*

(*a*). Rules relating to aggression laid down by parents in the home were found to be of primary importance. Children's attitudes reflected as much certainty or as much confusion as the parents themselves expressed. Children's attitudes also reflected the rules laid down with regard to specific situations in the home, e.g., behavior with siblings.

(*b*). Experience in dealing with other children in a social situation proved to be important in many ways.

1. The need to stand up for one's own rights and to exhibit a certain amount of aggression with other children forced the child upon occasion to deviate from parental rules.

2. The tendency of other children to regard aggressive behavior more leniently than did certain parents or teachers tended to relax the standards of the child who had been taught never to be aggressive.

3. The development of strong friendships, and the increase with age of "group feeling" tended to bring with it increasing independence of adult rules.

4. The group as an entity developed a set of standards of its own, independent to a large extent of adult rules. Each child was therefore brought under the influence of this group authority in addition to adult authority. Group authority seemed to consist of (*a*) patterns derived directly from adult rules; (*b*) patterns derived from experience in dealing with other children, in some cases consistent with and in other cases opposed to adult rules; (*c*) patterns derived, probably, from other child groups, e.g., terms of criticism.

5. The child's status in the group—relative age and size, interests, friendships of lack of friendships, inclusion in "gangs" or exclusion by a few or all children—apparently had a marked effect on the degree and kind of influence exerted by the group on his behavior and attitudes.

(*c*). The child's own personality patterns indirectly affected both attitudes and behavior through:

1. The effect of his personality on other children's personal feelings toward him; and consequently on his status in the group.

2. The degree of his apparent innate tendency to be "outgoing" in all behavior, including aggression; therefore, the extent to which he behaved in such a way as to expose himself to criticism and to the imposition of rules.

(*d*). Techniques used by teachers in handling aggression appeared to carry most weight when they were aimed directly at helping the child find means of handling an existing social difficulty. Attempts on the part of teachers to repress or restrict or reprove aggressive behavior apparently carried less weight. This was presumably because (*a*) teacher authority was offset by group authority and, in some cases, parental authority; and (*b*) the children appeared to sense these teachers' fondness for and acceptance of them, whether they adhered strictly to teacher rules or not.

2. *Interpretation*

The most marked characteristic found in the attitudes of these children toward acts of overt aggression was that of conflict—conflict between acceptance of parent attitudes and of opposing attitudes on the part of other children; between attitudes expressed by one parent and by the other; between attitudes received from parents and the demands of an immediate situation; between the results of group experiences and precepts handed down by adults; between group patterns and group rules; between group patterns and adult rules; between conflicting standards in adult rules alone; between the acceptance of parental standards expressed verbally and opposing parental standards expressed in other ways through the parent-child relationship; between the child's own needs and drives and adult standards for his behavior. Verbal attitudes expressed in one situation—for example, in the experimental set-up—might coincide closely with those expressed in another situation. They might differ markedly. And neither of these would necessarily indicate what the child might have to say in a third situation. Attitudes as expressed in response to difficulties with other children—that is, in situations calling forth possible aggression—had no more agreement with each other than they might have with attitudes expressed verbally. Even the same situation (noted especially with regard to the experimental set-up) could call forth conflicting attitudes at the same moment. Hitting might be dubbed verbally "not nice" because that was what Mother had said; but animation and interest of expression, and suggestions that the experimenter should hit, indicated at the same time that it was quite all right; indeed, it was what Father had said.

Notable throughout was the potency of parental attitudes in

influencing the formation of child attitudes. Closely related to this factor was the degree of conflict shown by the child. A parent who realistically understood the child's need for aggression in many situations and who both in word and in deed accepted such behavior, provided little opportunity for conflict when the child came up against a need for aggressive expression. Another parent, anxious that the child should grow up a firm pacifist, laid strict prohibitions on any form of fighting; and when this child, intelligent and alert to the "rights" and "wrongs" of behavior, felt the difference between these prohibitions and the realities of a world of nursery school children, a period of intense conflict ensued. Still another parent, liberal in general in his feelings about a young child's aggressiveness, liberal especially because he felt that this child needed techniques of self-defense against an older brother, provided no conflict for the child in respect to group patterns in the nursery school—but did find it hard to get the child to take the teachers seriously. In a fourth situation the child was given specific instruction by the parents (*a*) not to hit a baby sister, (*b*) (because of their feeling that the child was overly timid) to hit back when he was hit first by other children. This child seemed quite confused in his feelings about his own aggressions.

The degree of conflict shown varied with each child. It varied, too, in individual cases, with changes in potential of the various forces operating on the child. Most interesting was the fact that the child who apparently underwent the most intense conflict between adult and child mores, attained later a happy compromise between the two. That strong parental attitudes against hitting were weakening (to the point that the child could happily phantasy a complete acceptance of such behavior on their part), that all her personality patterns tended toward mildness of behavior, while at the same time a happy social experience was giving the child every sort of backing, were probably the most important contributing factors in the resolution of this conflict.

Aside from the fact that confusion arose because the children were exposed to widely differing standards from different areas of their environment, there were indications that the parents themselves were not always too sure of their own standards. Even when most sure that they preferred for their children peaceable means of settling difficulties, they tended to become anxious and uncertain of their standards when the children did not stand up to aggressions

of others. They became frightened at this apparent timidity on the part of the child and felt confused as to what point of view they should take. Parents who from the start more easily accepted a certain degree of overt aggressiveness on the part of the child, became easily alarmed at the extent to which the child might put this acceptance to use. They also wondered whether they were on the right track and felt some conflict in their own attitudes. Though their verbalizations to the child might remain the same, these conflicting underlying attitudes were bound to show in some way.

In all cases parents seemed to feel that attitudes toward aggression might "depend on circumstances." Unprovoked hitting they could not approve. Retaliative hitting was a different matter. Hitting a smaller child was quite different from hitting a child one's own size or larger. For a girl to hit a boy was, in general, more acceptable than for a boy to hit a girl. Parents very easily—and perhaps inevitably—become confused in their own thinking. It was hard for them to maintain definite attitudes on the subject, no matter what these attitudes might be. This, too, is reflected in the children's attitudes. There are too many issues involved. There is nothing simple and concrete which they can grasp hold of. Hence some of the confusion and feeling of conflict in their attitudes seemed to be a pretty direct representation of confusion and feeling of conflict in parental attitudes.

Through our conferences with the parents, we obtained, of course, only those attitudes which they were able to verbalize. This was only part of the picture. We would feel it important to make a more thorough study of parental attitudes—of their derivation, of their implications in the parent's own emotional life, of their implications for the parent-child relationship—before one could show clearly how and in what ways the child's attitudes are influenced by the parents'. Certainly there was every indication that the nature of the parent-child relationship was the underlying link between them. Further study of how parent attitudes toward aggression fit into this relationship would throw more light on the sources of conflict for the child.

Important as parent attitudes are, the attitudes of other children are also tremendously important. For one thing, the attitudes of a group of children may be quite contrary to the attitudes of the parents of any individual child, thus creating a sure basis for conflict. Children of four or five who had been in school two years

or more developed very warm and close friendships with other children. They were close enough to create a real conflict of loyalty between friends and parents when there were opposing attitudes from the two different sources. But this is not the only way in which a child's social group may create conflict. Social influence works in various directions and through various channels. In certain ways a group of children exerts something of an authoritarian influence on any of its members who deviates too widely from their ways of doing things. Verbally and actively they can compel him to follow group patterns. This may be an almost direct form of parental influence. They lay down the law as they have learned it from their parents. They may be more strict than adults are. They are certainly more free in their ways of expressing criticism. They can chastise him, ostracize him, punish him in ways that few adults would use. Thus they may assert a potent restraining influence. On the whole, however, they tend to be much more liberal in their attitudes toward aggression than are adults—simply because they are the ones who are fighting the battles. Their rules are based also on the realities of a nursery school world. Parental rules lurk in the background but realities are, on occasion, more important.

Aggressive techniques are necessary and are, up to a certain point, acceptable, as the records in Chapter IV demonstrate. If someone attacks you, the most realistic response is to make a counter-attack. And at the same time competition and rivalry are, for three- and four-year-olds, the order of the day. It is not just a matter of whether or not a certain kind of behavior is acceptable, but whether or not one is gaining the necessary prestige. Gangs and inter-gang feuds are part of the fun of growing up. Winning is more important than following abstract rules. The "tough guy," though not openly praised for his toughness, gains enormous prestige. The timid, shy children want to be like him. They obtain vicarious satisfaction in applauding his bravery. The more fearless children enlist him as their ally. They tell him he "mustn't fight," but they cannot help admiring him when he does so. Two highly aggressive children may be observed playing together for hour after hour, in spite of constant bickering, quarrels, slaps, shouts. Each wants the company of the other more than that of any other child in the group. Each likes best the child he admires the most—the one who isn't afraid of him. (This admiration for the aggressive child does not apply where high overt aggression is based on emotional insecurity—

this kind is too hectic, apt to be too violent and unreasoning. It is, in general, condemned.)

Just as parent attitudes function through the parent-child relationship, group attitudes function through the relationship between each child and his group members. "Best friends" are tremendously important in influencing his attitudes. A lack of "best friends" is equally important. Changes in the course of friendships showed accompanying changes in attitude to one's own behavior. Anything that tended to undermine a child's feeling of security in his friendships or in his group at large tended to bring with it changes in the degree of his overt aggression, changes in the attitudes expressed toward him and his behavior, changes in attitude toward his own behavior.

One child had early shown a normal amount of overt aggression. Strong parental rules reduced this to a very low point, with accompanying signs of timidity and over-anxiety about her own behavior. A strong friendship with a child who expressed her aggression more freely tended to produce conflict. Her social experience was coming up in opposition to her strong attachment for her parents. The parents, according to their testimony during interviews, became less sure of themselves in their prohibition of aggressiveness. Presumably the child sensed this. Increasing popularity in the group at large, another friendship with a child who was also timid but liked to experiment with aggressive techniques, apparently added to a feeling that being aggressive was not too great a sin, after all. Her aggression increased, then settled down to a point where, apparently without conflict, she could use aggressive techniques if they were called for, could omit them if not called for. Along with this change the timidity and techniques of withdrawal pretty well disappeared. Attitudes became more realistic, seemed to produce no conflict.

Another case pointed, too, to the importance of child-child relationships in the formation of such attitudes. Parents were liberal, took it for granted that the child would need to use aggressive techniques upon occasion. The child used them fairly frequently. She, too, was happy in her friendships. As her best friend began to grow away from her, however, she showed in general much less of a feeling of security in the group. Her aggression rose markedly. She no longer hit out only when occasion demanded, but was easily aroused to displays of intense antagonism. This made her less acceptable to the group at large. Her attitude toward aggression,

liberal earlier, now conformed to a much more conservative parental pattern. Without knowing more about the home situation, it was not possible to know how much of a cause-and-effect pattern this was. At any rate, the two developments took place at the same time.

Through the medium of friendships and indeed all of the child's social relationships, his whole make-up entered into the formation of his attitudes. A child whose interests, whose likes and dislikes, whose loves and hates tended to express themselves in forms fitting into group ways of doing things, received support from the group and tended to go along with the group in the development of attitudes toward behavior. One child in this group showed certain patterns which did not fit into group patterns. He made some friendships, but they were rather unstable. There were no children who were consistently loyal to him. He showed many patterns which they could not accept at all, which on occasion they even held up to ridicule. When others of his age were developing fairly clearly defined sets of rules by which to guide their behavior, he still seemed confused and uncertain. Though part of this was undoubtedly due to a confusion of rules from home sources, there was at the same time no steady support for him from other children. However he behaved, he was not thoroughly accepted. There was no steady and consistent influence by which to guide any principles.

In general, attempts to limit certain forms of overt aggression by instilling in the child the feeling that it was wrong seemed only to force the child to find other ways of expressing his aggression or to bring about strong feelings of guilt about his behavior. A child who limited overt aggression almost to a zero point was, from the evidence, probably turning this aggression in on herself. Timidity, intense anxiety when asked to express aggression overtly, an impression of some feelings of anxiety in general, marked expression of guilt over her own behavior following an incident of overt aggression, quick efforts to justify or rationalize any kind of aggression, however mild, were accompaniments of her low overt aggression. Other ways of satisfying aggressive feelings appeared in gaining this satisfaction vicariously: applauding and praising others when they were aggressive, asking others to carry out aggressive acts for her, unconsciously imitating body movements of children fighting. As this child gained a more realistic attitude toward her own feelings of aggression, these symptoms dropped out bit by bit. She was no

longer afraid to hit back. Feelings of general anxiety no longer manifested themselves. Vicarious means of obtaining satisfaction appeared much less frequently. Another child expressed his aggressive feelings in general bossiness, showing off, bragging—to an extent that brought him ridicule and unpopularity. He also made use frequently of indirect (and socially acceptable) techniques for gaining a desired end, however undesirable the end might be—for example, offering another child a toy so that he could get that child's toy or take his place in a game. The third child, active and outgoing in every way, tending toward violent outbursts of aggression when upset, went to extremes in her attempts to justify her aggression in such instances—and this in spite of the fact that her parents were much more liberal than most in their acceptance of the need for aggressive expression. A normal amount of aggression did not bother her. She apparently recognized the difference between this and a violent expression of feeling.

The fourth child, who like the last expressed feelings of insecurity in high overt aggression, had been limited least of all in its expression. He always used the most direct means to gain an end, regardless of what might entail. In his case we saw no sign of his reverting to vicarious means of expression aggression or indirect means of attaining desired ends. At the same time, however, we might speculate on the degree of braggadocio he showed about his prowess in battles. He was apparently using this prowess as a means of gaining prestige with older and bigger children. We wonder whether some of his swagger might have been a cover for other feelings. Liberal as his father was (and the child had a strong attachment to his father), his mother took the attitude that hitting was "not nice." The children, too, told him they thought he carried things a little too far.

We would think it hard for a child to avoid all feelings of guilt about aggression. It is still pretty generally taken for granted that "nice" children do not hit. What interested us was, first, the many different ways in which feelings of guilt might be manifested; and second, that if aggression was not allowed to show in one way it was bound to crop out in another.

We have attempted throughout our study to show that adult conduct and adult precepts are fragmentarily understood at the nursery-school age; that the fragments which are understood and half-understood may produce or increase conflict; that even when

understood and accepted commonly they may fail to be integrated into the child's world of values at a given time; and that even when integrated at a given time they may prove too superficial or too rigid to be serviceable in new situations.

Above all, the sheer acquisition of terms and attitudes of opprobrium and condemnation in relation to acts which serve an important function in childhood activities, has proved to be an ineffective, and at times confusing procedure, even when such attitudes are consistently imposed on the child. When inconsistently imposed the records suggest that they may increase the child's confusion and conflict, and interfere with his attempts to understand the nature and social function of rules of conduct.

The developmental trends indicated in these few cases cannot be assumed to be characteristic of all cases, even of all cases from the socio-economic group to which these children belonged. They nevertheless show the occurrence of certain patterns which may or may not appear in such a group.

As indicated above, the outstanding pattern in the development of attitudes toward aggression among these few subjects was one which seemed to reflect similar patterns in adult attitudes: a conflict between ideals of coöperation, sympathy, and loyalty on the one hand and, on the other hand, a need for personal competitiveness and aggression of a certain kind. The fact that this conflict is apparently well-rooted in our culture suggests that every child, to a greater or less degree, will have to meet in some way the same problems which the subjects of this study had to meet. The question then arises whether the material presented here indicates any methods whereby the nursery school can help children to work out this conflict with a minimum of anxiety and emotional stress.

One of the greatest sources of confusion for these children lay apparently in the discrepancies between rules established in different areas of the child's environment. Rules laid down by parents may in themselves embody a double-standard. But when these rules also were different from those imposed by teachers, the children were faced with an impasse. They were, at their age, neither mentally nor emotionally capable of understanding or living up to so many differing standards at one time. Attempts to do so would probably have only produced greater tension and conflict over this question of how aggressive they were expected to be and in what ways they might be allowed to show it. The children in this study

apparently solved the particular difficulty of resolving differences between parental and teacher rules by ignoring the teacher's rules when necessary, knowing that these particular teachers would accept and like them none the less.

But this is relatively unimportant. The question is not so much one of how to help the child with or even to avoid the conflict between parental and teacher rules; it is one of how to help the child find his own solution to the conflicting attitudes which he has already met and which he will have to meet in many other situations throughout his lifetime. The teacher might do her best to learn about and fit her own practices in with those the children have been accustomed to at home. She might do her best to impose as few arbitrary rules as possible. The teachers of the children studied here did both of these, but the children were nevertheless faced with the double standard of competitiveness versus coöperation forced on us by our culture. They will always be faced with conflicting standards from different areas of their environment. But the child is not in nursery school to learn how to subject himself to authority nor even to find the solution to the conflicts which authority imposes. He is there to develop this authority within himself and to do so with as effective and satisfying means as adults can provide.

The material in this study suggests that the provision of opportunity for contacts with others of one's own age is, in this preschool period, even more valuable and necessary than has been assumed. Emphasis has been placed on the "social learnings" to be derived from such a situation. Insufficient emphasis, it seems to us, has been placed on the emotional value inherent in contacts with others facing relatively the same problems as oneself. It was found, for example, that close friendships could become a source of balance and objectivity which adults alone could not provide. As long as all rules came from adults and all strong attachments were to adults, it was, apparently, much more difficult to separate the concepts of "right" and "wrong" from the concepts of "what mother says" and "what father says." Even if it were possible, intellectually, to distinguish between these concepts, it was difficult to detach from the concepts of "right" and "wrong" the strong emotional feeling inherent in a child's relationship to his parents. Friends could help to make this detachment come about more easily. A friend was an ally, someone towards whom love and loyalty could be directed with,

at the same time, the problem of authority almost entirely absent. A friend was not, it seemed to us, just a person with whom to share interests or on whom to vent some of one's own urges for superiority and prestige. He was also another person struggling with this problem of meeting conflicting attitudes and rules imposed by adults. He could upon occasion support one in defiance of adult authority when this defiance was necessary to one's own interests. He could also exhibit the reasonableness of compliance upon certain other occasions. By so doing, defiance or compliance came, apparently, to assume greater objectivity. One could gain the attitude that "what mother (or the teacher) says" may at times be unrealistic, at other times entirely reasonable. It was not necessary to cling so fervently to adult rules nor to suffer severe feelings of guilt by transgressing them, when there was another strong means of support in the background. The undue amount of emotional feeling attached to adult rules could be, to some extent, discarded. The child could retain his love for the adult and yet make his own independent judgments of adult rules. Only in this way could these rules become a conscious part of himself rather than part of a blind dependence on parents or teachers.

While much of this is necessarily conjectural, there appeared in this study to be a clear correspondence between changes in friendship status and development of objectivity in attitudes toward aggression. While age and intelligence level were important, these factors were outweighed by the child's status in the group. This suggests, then, the importance of recognizing the part played by friendships in helping the child to resolve the conflict in attitudes toward aggression. It also suggests that the teacher cannot, by strengthening her authority through punishment or reproval of the child for being overly aggressive, do much but make a satisfactory resolution of the conflict harder to obtain. This may explain why certain techniques used by the teachers in this study showed good results, why others seemed to be unavailing.

The one technique which in every way appeared to fulfill the child's needs and to provide real learning at the same time was that of helping the child find a solution to his immediate problem without openly implying any reproof nor in any way changing the direction of his activity. Reproof is unnecessary, since the child is already very sensitive to adult approval or disapproval. The entrance of the teacher into the situation is sufficient indication

that he is not living up to her standards. Nor are explanations of the wrongness of his behavior necessary. If he has not recognized this for himself, his friends have made it very plain. What he is seeking is a solution for this particular situation, one which will recognize his need for aggression and help him to exhibit it in a form which also answers the demands on him for coöperation with others. When the teacher furnishes a way of handling the situation which answers these conflicting demands, she is teaching him what he is asking to know. His friends are furnishing the support which will help him to gain real objectivity toward how he should behave. But it is up to the teacher to furnish the techniques. Her rules and discipline with regard to aggressive behavior are an essential part of her teaching. But the child truly learns from them only as they are directed at furnishing him with techniques for getting along in a world which requires both aggressiveness and sympathy, even, perhaps, at the same time. When rules about hitting or fighting were applied in any other way in this group, the solidarity between members of the group was strong enough to counteract the rules. Punishments and disapproval were ignored, or, if taken seriously, the new techniques developed in place of those for which punishment was incurred were apt to be as unrealistic or "anti-social" as were the original actions for which the child was punished. Not being supplied with suitable techniques, he had to use what he had learned in other situations. This might or might not solve the problem in a way truly consistent with the varying demands being made on him.

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STUDENT ATTITUDES TOWARD RELIGION . 323
By Erland Nelson

THE PREDICTION OF THE OUTCOME-ON-FURLOUGH OF DEMENTIA PRAECOX PATIENTS 425
By Joseph Simeon Jacob

SIGNIFICANT CHARACTERISTICS OF PRE-SCHOOL CHILDREN AS LOCATED IN THE CONRAD INVENTORY 455
By Katherine H. Read

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STUDENT ATTITUDES TOWARD RELIGION*

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Acknowledgment 325

I. Introduction 327

II. Plan of study 333

III. Attitudes of college and university students toward Sunday observance 337

IV. Student attitudes toward the church 355

V. Student attitudes toward the reality of God 373

VI. Student attitudes toward God as an influence on conduct . 389

VII. Factors related to student religious attitudes 407

VIII. Summary 417

References 423

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Although originally a manuscript nearly three times the size of the present volume, it is believed that this abbreviated form will serve a purpose in making the relevant data readily available to student pastors, Y. M. C. A. workers, college teachers and administrators, students of psychology and sociology, and to others interested in the religious attitudes of collegiate youth. With this in mind, we have presented these data in simple form with a minimum of theoretical discussion. The more obvious inferences are pointed out—study and discussion by the various denominational groups will, no doubt, yield others.

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I. INTRODUCTION

In days of unrest, dictatorial states, reports of new religious cults, atheism, it is not surprising that Americans should raise questions concerning religion on the college and university campus. Some writers and speakers have freely spoken of "modern irresponsible college youth." It is alleged that the collegians have left the church and all but left God and the home out of their busy lives. Atheistic and communistic societies have worked rather openly in certain university centers. A decrease in church interest on the part of students has been alleged in some quarters. Such popular reports, although often lacking in objective support, have served to focus attention upon the religious attitudes of college and university students.

The need of a rather extensive objective study of this field becomes painfully evident when we are faced with a few rather specific questions. If one were to take the time to measure a fair sampling of college and university students, what would such measurement reveal as to their attitudes toward Sunday observance? What would be their attitude toward the church? Do students themselves believe that the church affects their lives? Do college and university students believe in the reality of God or have they all but embraced various atheistic attitudes? If they do believe in a god, is it the God of the Bible or some vague force? If they believe in a personal God, do they feel that this reality is an influence on their conduct, or is their belief merely a matter of intellectual opinion? Do freshmen in college differ in any of these four respects from seniors, from sophomores, or from juniors? Are the attitudes of college men more generally favorable toward religious values than those of the modern co-ed? Are college women more homogeneous in their attitudes toward religious issues than men? Is the freshman-senior difference in religious attitudes greater among women than among men? Do the attitudes of students in large universities differ from those found in small denominational colleges? What differences exist between colleges of the different denominations? Is there any relationship between geographic location of the college and student religious attitudes? It is these very questions with which the present investigation is concerned and which, it is hoped, may be answered somewhat objectively through the data to be presented in the following chapters.

That these questions are of more than passing importance seems evident upon little reflection. Writing of the powerful force of religious attitudes, Josey (6) points out that "the effort of man to deepen his moral and spiritual life by achieving a more harmonious relation with the source of his being" gives rise to attitudes of the strongest type. For this cause, "Brothers have fought brothers." And history adds, "nations have fought nations." That changes in attitudes or the lack of change in religious attitudes affect overt behavior in entire peoples is indeed so evident that we need only mention such examples as the vicissitudes of the Hebrew people, the rise of the Orthodox and Roman churches and their places in world history, the Crusades, the vast national, educational, and general social effects of the Reformation, the continued effects of the attitudes of such leaders as Luther, Wesley, Livingstone, and scores of others. The effect of a change of religious attitudes is perhaps seen most dramatically on a modern mission field. With one set of attitudes, children are still being sacrificed as a religious rite. Within a surprisingly few years, with a new set of religious attitudes prevalent, children are baptized, taught to read, and an entirely new set of behavior patterns is in evidence.

Something of the underlying power of religious attitudes is suggested by Bogardus (1). Speaking of attitudes toward an all-seeing God, "Both public opinion and law can be evaded, but not a Judge who is all-seeing, all-knowing, and all-powerful." This author further points to the powerful influences of deep-seated sentiments and life viewpoints based on religious attitudes.

The relationship between religious attitudes and attitudes in other areas is clearly seen in a number of objective studies to which we shall now briefly turn.

Zimmerman (24) found religion a strong conservative force. In his studies, twice as many of the non-religious persons as religious held beliefs that the moral code is too rigid. Prohibition was favored by 29 per cent more of the religious than of non-religious persons. Socialism was approved by twice as many non-religious students as religious, while divorce would be made less obtainable by the religious students.

On the basis of 215 University of Chicago students Hilding Carlson (2) reports seniors as favoring pacifism, birth control, but opposed to prohibition. Social science students were slightly more

favorable toward God than were physical science students. Jewish students were most liberal on social questions—Catholics least liberal except for prohibition. Intelligence was not found correlated with prohibition attitudes, but was positively correlated with communism, birth control, pacifism, and atheism. The author interprets the evidence as indicating three general factors: (*a*) an intelligence factor, (*b*) a general "radical-conservative" factor, and (*c*) a religious factor. The religious factor in attitudes is the primary concern of this paper while "radical-conservative" attitudes of the same students will be briefly considered in Chapter VII.

While a number of reports indicate a positive correlation between liberalism and intelligence, Symington (19) found such correlation very low in the case of students who come from a conservative background—such correlations ranging from .13 to .27. The correlations between intelligence and liberalism in religion for students coming from liberal backgrounds ranged from .42 to .55. In his study based on 612 subjects, Symington included students at a Southern college, students in a teacher-training school in Canada, freshmen at a liberal church college, and a group of Midwestern agricultural college students with rural backgrounds. In interpreting his data secured from a *Test of Religious Thinking,* a test of religious attitudes, and the Bernreuter *Inventory,* the author concludes:

> We cannot argue that liberals are more mature, independent, socially adjusted, and democratic because they think about religion in a liberal way. . . . We have not determined whether conservatives are more dependent, stereotyped, . . .

Turning from the question of correlations to the still more pertinent one of the religious attitudes actually held by college students we first note an early study by Leuba (12). In a study of about 1,000 students in 10 colleges this author found 82 per cent of the women and only 55 per cent of the men believed in a personal God. Even more amazing is the report that 32 per cent of the men and 17 per cent of the women believed that the existence or non-existence of God would make no difference in their lives. In one college 80 per cent of the freshmen expressed belief in immortality while only 70 per cent of the seniors in that college claimed this belief. This freshman-senior difference led to the assumption that students were inclined to become less religious as they progress through college.

The *Syracuse Reaction Study* (7) likewise indicates a shift from freshman to senior in the direction of more liberal religious beliefs for seniors, but both freshmen and seniors show amazingly low percentages who believe at all. Twenty-five per cent of the freshmen studied compared with 14.7 per cent of seniors expressed belief in a personal Creator. These figures are based on 1,321 students in the Liberal Arts College of Syracuse University. A more modern view of God was acceptable to 42.7 per cent of the same students (cf., p. 373). Church attendance once a week and prayer once a day or oftener was indicated by 39 per cent of the group.

Edwards and colleagues (5) likewise found less than 40 per cent of their group of 600 seniors in 23 colleges expressing a belief in a personal God. Regular church attendance was claimed by 44 per cent of the men and 55 per cent of the women.

Parents possess stronger attitudes toward religion than do their children in college, according to a study by Kirkpatrick (8).

That colleges and universities are conscious of religious attitudes as part of the educational responsibility, is indicated in a study by Nelson (14). Among the 68 institutions studied, the most frequently appearing attitude objectives were in religious areas.

In a study of 1,900 students, ages 12 to 16, in five provinces of China, Chang (3) found more girls than boys who considered Christianity beneficial to China.

The study by Morse and Allen (13), 1913, perhaps the earliest study of this type, indicates that approximately one-third of their group conceived of the worship of God as the most important part of religion, while nearly two-thirds of these South Carolina students considered services to others as the more important. In sharp contrast to the report of the *Syracuse Study* cited above, two-thirds of these Southern students attended church at least three times a month and engaged in prayer a least once a day.

In a study of Lutheran institutions, the writer (18) found a larger percentage of students choosing their particular college because of the "Christian nature" of the institution than for any other reason such as accreditment, cost, proximity to home, athletics.

There seems to be comparatively small decrease in religious attitudes as students enter the upper classes at the University of Chicago, according to a study by Thurstone and Chave (20). Freshmen were most favorable, followed by juniors and seniors, with sopho-

mores least favorable. Women were slightly more favorable toward the church than were men.

In summary, there has been public concern and popular criticism of the religious attitudes of college and university students. Pertinent questions have been raised as to what students' attitudes are toward Sunday observance, toward the church, toward God, and toward God's influence on personal conduct. How do students differ among themselves, from class to class? Are there institutional differences, sex differences, geographic differences? The studies cited have emphasized the far-reaching influence of religious attitudes. Certain studies have indicated a correlation between liberal religious attitudes and intelligence. Others intimate that a large part of college students claim no belief in God.

We turn now to the plan of the present investigation and to a direct consideration of the questions raised.

II. PLAN OF STUDY

The purpose of this study is to present data concerning the attitudes of college and university students toward certain religious areas, and in these fields to measure college class differences, sex differences, geographic variations, and differences between institutions of like and of unlike types. Finally, this study includes certain factors related to religious attitudes such as conservatism-radicalism, attitudes toward the institution attended, campus activities, *NYA* work and fathers' vocation. It will be noted that both the purpose and the plan of study differ from previous investigations in one or more respects:

1. The selection of four religious areas as the subject of the investigation was in accordance with the responses obtained from 68 colleges and universities. The majority of these institutions ranked religious attitudes as of prime importance in building student attitudes (14).

2. The method of measurement has been that of carefully constructed scales of known reliability and consistency. Economical as the questionnaire method may be, one may question whether it gives the subject sufficient opportunity to express himself on issues involving so many factors as do religious issues. Furthermore, dependable comparisons between groups become hazardous due to irregular intervals which may exist between the items on a questionnaire. Hence we have concentrated our attention on a score of four religious areas using a battery of as many scales.

3. The four following scales, all designed by Thurstone and colleagues (21) were used: *Attitudes Toward Sunday Observance, Attitudes Toward the Church, Attitudes Toward God* (Reality), *Attitudes Toward God* (Influence on Conduct). The application of the method of equal-appearing intervals to the construction of these scales may be presented, using as an illustration the scale, *Attitudes Toward the Church.* A set of 130 statements concerning attitudes toward the church, ranging from the most favorable to the most unfavorable, were submitted to 300 subjects for ranking. These judges were instructed to sort the 130 statements into 11 piles in the order of their degree of favor toward the church. With these data available, an item study was made showing the percentage of judges placing each item into each of the 11 classes. Each statement was then plotted on a zero to 11.0 scale showing

the median point at which it was placed by the judges. On each side of the median is placed the line marking the quartile points, the separation between which is used as the measure of ambiguity or *Q* value. The degree to which the same item is actually endorsed by subjects at both ends of the scale furnishes a measure of relevance or internal consistency. Reliability based on correlation between Forms *A* and *B* given to 200 freshmen was .848, and by the Spearman-Brown formula the reliability may be interpreted as .92. A similar technique was used in the construction of each of the other scales.

4. Not unmindful of the criticism sometimes made of the measurement of verbalized attitudes two special precautions have been taken in this study: (*a*) Students were encouraged to indicate their attitudes frankly with or without signing their name to the test papers. However, according to the data presented by Corey (4), this precaution was probably unnecessary. (*b*) It was made clear to the student that his expressions would in no way affect his standing at his college, but that the unscored papers would be sent directly to the writer where all individual expressions are held strictly confidential. As an additional device to indicate the freedom with which students would actually express themselves under this arrangement, a supplementary test was added measuring attitude toward the college or university now attended. If restraint in student expression is felt anywhere on the test it should be expected to appear when he is invited to express his attitude, favorable or unfavorable, toward the college attended. Yet also in this "test of the test," the utmost freedom seems evident. Fifteen of the 18 institutions studied included expressions from some students who were antagonistic toward their college. Every institution includes students strongly favorable with the median for the 18 institutions slightly above the "neutral" point. Furthermore, seniors whose choice of college is by this time almost irrevokable are only slightly more favorable toward their college than freshmen.

5. This investigation is based on the responses of 3,749 students attending 18 colleges and universities which on the four tests makes a total of almost a half million student responses. The institutions studied may be classified as follows: four state universities, three of which are located in the Midwest and one in the South; six Lutheran colleges of which three are located in the Midwest, two

in the East (east of Chicago), and one in the South; three institutions affiliated[1] with the Society of Friends, all of which are in the Midwest; one representative institution included from each of the following church groups: Catholic, Methodist, Presbyterian, Seventh Day Adventist, and United Brethren, all of which institutions are west of the Mississippi.

6. The battery of tests together with a measure of radicalism-conservatism (15) was sent to the coöperating colleges and universities in May, 1936, and administered to the seniors within a few weeks of their graduation. In August, 1936, additional booklets were sent to coöperating institutions for the testing of freshmen, sophomores and juniors. Institutions were urged to have the testing done promptly after the opening of school before the institution had been given much opportunity to influence student attitudes. This was also done in order to detect possible selective factors in the type of freshmen admitted by various institutions. Early testing was also desirable for our purpose in measuring freshman-senior differences. Since the tests were not sent out until May of 1936 we may be rather certain that the seniors tested in May had enjoyed the "benefit" of collegiate influence for approximately four years. Since most of the freshmen tests were sent out in August and returned in October of the same year, seniors and freshmen were tested within approximately four or five months of each other. Hence we believe our freshmen scores represent those of students just entering college and senior scores those of students shortly before graduation, with a number of exceptions for transfer students, seniors who will not graduate, and others.

7. In the interest of strict impartiality, we shall omit the names of the institutions coöperating in this study. In this way we shall have greater latitude in making direct comparisons. Hence we shall refer to each institution by code letter, "State University *B*," "Lutheran College *H*."

8. Finally, the plan of study includes provision for data as to the permanence of attitudes and the persistent question as to the correlation between the attitudes checked on a test and overt conduct in the years to come. To this end, all of the original test booklets

[1] "Affiliated" here refers rather loosely to the source of support and the more obvious seat of control. On this basis, state universities are affiliated with the states. Church colleges are affiliated with the denominations named.

are being preserved for the continued study. Since the subjects included in the present study are students in colleges and universities in which alumni offices are active, it is planned to locate as many as possible of the identical students whose names appear on these booklets after each five-year period. It is planned to compare original test scores with data as to vocational success, religious standing in community, church activity, and other pertinent material concerning actual conduct. At the first of these re-checks, 1940, it is further proposed to re-test as many as possible of these identical persons in the identical areas with equivalent measures.[2]

[2]If the use of scales, means, and standard deviations should seem too mechanical, cold, and devoid of the essence of religious attitudes, it should be admitted that numbers are by no means religious values. However, numerical values may represent religious attitudes. Back of each individual person's score are from 20 to 45 weighted items which do represent attitudes. In fact the present report might be compared to a framework from which we have omitted the maze of detail which runs into well over half a million student responses. Our numbers are convenient vehicles for conveying attitude tendencies on the part of large numbers of students toward very complex issues.

III. ATTITUDES OF COLLEGE AND UNIVERSITY STUDENTS TOWARD SUNDAY OBSERVANCE

What is the attitude of college and university students toward the commandment, "Remember the Sabbath Day to keep it holy?" What attitude differences are found in this area between freshmen and seniors, between men and women, between students in different types of institutions? If there were no other issues involved, the answer to these questions might not be so difficult, but we have here a number of factors involving social, economic, religious, and even legal issues which makes our problem much more difficult than the simple statement of the question would indicate. In order to take cognizance of these intermingled issues, we have not used the simple questionnaire, but have chosen the *Scale for Attitudes Toward Sunday Observance* by Charles K. A. Wang and L. L. Thurstone, Form *A*. Twenty-two items are included in the scale, inspection of which will reveal something of the issues involved. Here we find such items as *We should spend Sunday only in Worshipping God, Everyone should go to church on Sunday, Only cultural activities should be allowed on Sunday, It is wrong to play cards on Sunday, Theatres should be open Sundays as on other days, Sunday observance is a commandment we must obey.* Let this suffice to indicate that we have here, not only the question as to the subject's own attitude toward the commandment as a religious matter, but also his attitude toward issues such as those involved in "blue laws," moral duty, forced observance, and the approval or disapproval of related types of behavior.

The scale used in indicating attitudes toward Sunday observance was constructed by the method of equal-appearing intervals (cf., p. 9). This measure is graduated from a minimum of .3, attitude most unfavorable toward Sunday observance to a maximum of 10.2 with approximately equal intervals between these two extremes. The authors of the test interpret the area from zero to 3.4 as "entirely opposed to religious observance of Sunday." From 3.5 to 4.9 is an area described as "in favor of individual choice for Sunday observance." The midpoint or neutral area is 5.0 to 5.9. The area, 6.0 to 7.4 is interpreted as in favor of some restrictions on Sunday activity, while the upper part of the scale, 7.5 to 10.2, indicates attitudes in favor of strict religious observance of Sunday.

Keeping in mind the rather complex issues measured in this con-

tinuum we turn now to the study of student attitudes toward Sunday observance, first to students enrolled at state universities, then to those at church-related colleges.

State Universities

Of the four state universities participating in this investigation, three are located in the Midwest and one in the South. Most of the 1,033 students are attending the college of liberal arts or the teachers colleges in these universities. Since the other professional schools of these universities usually have much smaller enrollments than the two colleges named and since the other professional schools usually require some preliminary study in the college of liberal arts, we believe these students are fairly representative of the university student groups. However, the reader should bear in mind throughout this study that our designation, "university students," refers primarily to students enrolled in the colleges of liberal arts and in teachers colleges.

In presenting this investigation it shall be our purpose to present actual data with a minimum of technical and theoretical interpretation. Hence the statistical tables have been constructed to indicate the intervals in which the actual scores of each student fall, in addition to the measures of central tendency and of dispersion. Thus

TABLE 1

Attitudes Toward Sunday Observance in Four State Universities

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9										
9- 9.9					1	0.6			1	0.1
8- 8.9	25	4.9			9	5.4	5	2.9	39	3.8
7- 7.9	53	10.4	13	7.3	14	8.3	14	8.0	94	9.1
6- 6.9	76	14.8	18	10.1	20	11.9	21	12.0	135	13.1
5- 5.9	115	22.5	34	19.1	30	17.9	33	18.9	212	20.5
4- 4.9	125	24.4	45	25.3	35	20.8	37	21.1	242	23.4
3- 3.9	117	22.8	68	38.2	59	35.1	62	35.4	306	29.6
2- 2.9							3	1.7	3	0.3
1- 1.9	1	0.2							1	0.1
0- 0.9										
Total	512	100.0	178	100.0	168	100.0	175	100.0	1,033	100.0
Mean*	5.29		4.73		5.06		4.89		5.09	
$SD_{dis.}$	1.47		1.26		1.56		1.45		1.46	

*Freshman-senior difference, .40, $PE_{diff.}$ .09.

in Table 1 is found the distribution of student scores for each of the four classes and for the total. Mean scores and standard deviations are shown in the lower part of the table. Since the number of students tested varies from class to class, the percentage of the group falling in each interval is more meaningful than the actual number and has therefore been added as a separate column.

To what extent do the 1,033 students at the four state universities favor Sunday observance? As will be seen in Table 1, the mean for the entire group on the Thurstone scale is 5.09, indicating that these students are in the middle area described by the authors of the test as "neutral or indifferent." Perhaps we can most quickly clothe this score with meaning by quoting a few of the items typical of the "neutral" area of the scale: *"Conduct on Sunday should be entirely up to the individual," "The question of Sunday observance is unimportant," "I do not care whether there are blue laws or not."* Such statements represent the general tenor of the attitudes of these students. Obviously, it would be quite possible for persons who are deeply concerned over the proper use of the Sabbath still to be tolerant and wish each person to make his own decision as indicated in the first item quoted. It is even conceivable that a church group may be working devotedly to instill an attitude in its members which will lead them to set aside this one day each week for special religious services, and at the same time be bitterly opposed to "blue laws" and to any kind of compulsion in the matter. On the other hand, statements to the effect that Sunday observance is unimportant apparently do belong in the religious field being in opposition to the "Third Commandment."

As we study Table 1 further we note some significant attitude differences among the classes at these state universities. The freshmen who have just been admitted to university atmosphere show a mean of 5.29 on this scale, the highest of any of the classes. On the other hand, the sophomores show the lowest mean, 4.73, which is .56 less than the freshman mean—a significant difference. Since freshmen have presumably had fewest contacts with the institution attended and seniors most, it should be of special interest to note possible attitude differences between these two classes. As will be seen from the table, freshman-senior differences do exist in this attitude area—a difference of .40 with the smaller mean score for the seniors. Since the probable error of this difference is only .09,

we may consider the difference statistically significant. However, we note no regular downward trend from freshmen to seniors as might have been expected from some of the studies cited in our first chapter. Freshmen at these state universities were in the neutral area, sophomores least favorable toward Sunday observance, juniors more favorable, with seniors again less favorable.

How closely do these students cluster about their "neutral" central tendency? We have two indicators of homogeneity, the percentage columns and the standard deviation. From the percentage columns it will be seen that rather large percentages of freshmen and juniors deviate considerably from the mean. The more accurate indicator, the standard deviation, indicates greatest homogeneity among the low sophomore class and greatest dispersion of scores from the mean in the higher scoring junior class.

We have considered the students from four state universities taken together. Yet it is often maintained that each institution is different in atmosphere, morale, and other factors presumed to affect student attitudes. The extent to which student attitudes toward Sunday observance differ from one university to another is indicated in Table 2. Some differences both as to mean scores and as to dispersion of scores are evident. Universities *A*, *C*, and *D* are nearly equal both as to means and dispersion of scores. University *B*

TABLE 2

DIFFERENCES AMONG STATE UNIVERSITIES AS TO STUDENT ATTITUDES TOWARD SUNDAY OBSERVANCE

College	*A*		*B*		*C*		*D*		Total	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9										
9- 9.9			1	0.9					1	0.1
8- 8.9	4	1.3	15	14.0	19	3.4	1	1.8	39	3.8
7- 7.9	27	8.5	19	17.8	43	7.7	5	9.3	94	9.1
6- 6.9	45	14.1	20	18.7	63	11.4	7	13.0	135	13.1
5- 5.9	69	21.7	17	15.9	114	20.6	12	22.2	212	20.5
4- 4.9	88	27.7	13	12.2	130	23.5	11	20.4	242	23.4
3- 3.9	83	26.1	21	19.6	184	33.2	18	33.3	306	29.6
2- 2.9	1	0.3	1	0.9	1	0.2			3	0.3
1- 1.9	1	0.3							1	0.1
0- 0.9										
Total	318	100.0	107	100.0	554	100.0	54	100.0	1,033	100.0
Mean	5.03		5.96		4.97		5.00		5.09	
$SD_{dis.}$	1.33		1.76		1.42		1.40		1.46	

with a mean score of 5.96 is almost an entire interval higher than the other three state universities. The dispersion as measured by the standard deviation of the distribution is also decidedly greater than in the case of the other three universities. Since Universities *A*, *C*, and *D* are located in the Midwest and University *B* is located in the South, it seems likely that we have here a geographic factor. In this connection we may recall the greater prevalence of "blue laws" on the statute books in southern states compared with that of the states of the Midwest.

The attitudes of these state university students toward Sunday observance may be summarized as follows:

1. State university students show a mean slightly below the mid-point of the scale, which is in the area interpreted as "neutral or indifferent."
2. Freshmen are significantly more favorable toward Sunday observance than are seniors.
3. The freshman-sophomore difference in mean scores is even greater than the freshman-senior difference.
4. The highest mean score (sophomore class) is accompanied by the least homogeneity as indicated by the standard deviation.
5. A geographic factor seems present. The three state universities located in the Midwest are nearly equal in mean scores and dispersion of scores. The one state university located in the South has a significantly higher mean and also a greater dispersion of scores.

Lutheran Colleges

The six colleges affiliated with Lutheran church bodies may be considered fairly representative of Lutheran colleges in general. The colleges studied are affiliated with three independent Lutheran synods. Three of these colleges are located in the Midwest, two in the East, and one in the South. Five institutions are four-year colleges while one is a junior college. In studying the attitudes of students attending these colleges it should be remembered that the Lutheran church groups have not been especially active in promoting the enforcement of Sunday observance. The attitude of the Lutheran bodies seems to be one of favoring a personal religious life which then finds expression in Sunday observance and in other types of behavior rather than any desire to force such behavior upon individuals.

TABLE 3

ATTITUDE TOWARD SUNDAY OBSERVANCE BY CLASSES IN SIX LUTHERAN COLLEGES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9										
9- 9.9					1	0.7			1	0.1
8- 8.9	65	10.2	21	11.3	21	15.0	19	8.9	126	10.7
7- 7.9	136	21.3	49	26.4	37	26.4	45	21.0	267	22.6
6- 6.9	150	23.5	46	24.7	28	20.0	37	17.3	261	22.1
5- 5.9	117	18.4	33	17.8	23	16.4	40	18.7	213	18.1
4- 4.9	99	15.5	19	10.2	20	14.3	35	16.3	173	14.7
3- 3.9	71	11.1	17	9.1	10	7.2	37	17.3	135	11.5
2- 2.9							1	0.5	1	0.1
1- 1.9			1	0.5					1	0.1
0- 0.9										
Total	638	100.0	186	100.0	140	100.0	214	100.0	1,178	100.0
Mean*	6.09		6.31		6.42		5.84		6.12	
$SD_{dis.}$	1.50		1.49		1.52		1.61		1.53	

*Freshman-senior difference, .25, $PE_{diff.}$ .08.

Yet when we turn to Table 3 we note that the mean for this group of 1,178 students is an entire interval above the mid-point of the scale and an interval above the mean for the four state universities. The authors of the test describe this area, 6.0 to 7.4, as representing attitudes favoring some "restrictions on Sunday activity." We quote two items from the scale representing the statements in this area: *"People who are busy during the week need Sunday for play," "Since Sunday observance is a religious practice, it should not be forced upon anyone."* The attitudes of the students attending these Lutheran colleges are apparently about as favorable toward Sunday observance as the general attitudes of the Lutheran groups maintaining these colleges. Inspection of the mean scores by classes reveals a rather surprising increase in mean scores from 6.09 in the freshman class to 6.31 in the sophomore year with the addition of a small increase in scores in the junior class. In the senior year, the mean is .25 lower than in the freshman class, which difference, however, is not statistically significant.

Further institutional and perhaps geographic differences are indicated in Table 4. If Chicago be considered the dividing point between East and Midwest, we may summarize the institutional differences as follows: The smallest score, 5.14, which is in

TABLE 4

DIFFERENCES AMONG LUTHERAN COLLEGES AS TO STUDENT ATTITUDES TOWARD SUNDAY OBSERVANCE

Scale	*E*		*F*		*G*		*H*		*I*		*J*	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9												
9- 9.9	1	0.5										
8- 8.9	26	13.4	17	7.8	37	20.7	35	14.3	3	3.7	8	3.1
7- 7.9	60	31.0	42	19.2	69	38.5	57	23.4	18	22.2	21	8.0
6- 6.9	39	20.1	52	23.7	42	23.5	66	27.0	20	24.7	42	16.1
5- 5.9	34	17.5	47	21.5	15	8.4	42	17.2	21	25.9	54	20.7
4- 4.9	14	7.2	39	17.8	10	5.6	28	11.5	12	14.8	70	26.8
3- 3.9	20	10.3	22	10.0	6	3.3	15	6.2	7	8.7	65	24.9
2- 2.9											1	0.4
1- 1.9							1	0.4				
0- 0.9												
Total	194	100.0	219	100.0	179	100.0	244	100.0	81	100.0	261	100.0
Mean*	6.46		5.98		7.01		6.41		5.98		5.14	
$SD_{dis.}$	1.51		1.43		1.25		1.45		1.31		1.39	

*Difference between the two highest institutions (Colleges *G* and *E*), .55, *PE* .09.

the "neutral" area—approximately the same as the mean for the state universities—is the mean for a Lutheran college in the East. Two of the Lutheran colleges in the Midwest are next in order with mean scores in the upper portion of the same area, an Eastern and a Midwest college follow, and again, a Southern college is highest with a mean score of 7.01. This last mean is interpreted by the authors of the test as "strict Sunday observance." Although differences between the geographic groups named are not all great, several of the differences are larger than the class differences within institutions. The one Southern institution, *G*, has a mean 0.55 higher than the next highest institution with a probable error of only .09. College *G* is, indeed, significantly higher in this area than the other five Lutheran colleges—for that matter also higher than the other 17 institutions considered in this study.

The data from these 1,178 students at six Lutheran colleges indicate the following conclusions:

1. These 1,178 students as a whole are only slightly above the mid-point of the scale, approximately one interval above the state universities in their attitudes toward Sunday observance.

2. Attitudes toward Sunday observance are approximately equal

for the four classes in college. None of the class differences are significant. The freshman-senior difference was the largest difference found and this was only 2.5 times the probable error.

3. The mean scores indicate geographic differences among these Lutheran colleges. The smallest mean score was obtained by a Lutheran college in the East, the scores near the middle of the scale were found in Midwestern institutions, while a Lutheran college in the South shows the highest mean score not only for the Lutherans but also for the 18 colleges and universities included in this study.

Friends Colleges

Those who know something of the policy and practice of the Society of Friends will be particularly interested in the attitudes revealed by students attending Friends colleges. The data from the 387 students tested in three Friends colleges indicate attitudes less strict than those of Lutheran colleges but more strict than the state universities. The mean for the entire group, 5.87, is in the "neutral area," above the mid-point of the scale. Rather small class differences are discernible as we study Table 5. Freshmen and sophomores have mean scores which are almost equal. The junior

TABLE 5

Attitudes Toward Sunday Observance by Classes in Three Friends Colleges

Scale	Freshman		Sophomore		Junior		Senior		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9										
9- 9.9										
8- 8.9	16	8.4	6	7.3	4	6.9	5	8.8	31	8.0
7- 7.9	30	15.8	14	17.0	10	17.2	11	19.3	65	16.8
6- 6.9	47	24.7	18	22.0	11	19.0	16	28.1	92	23.8
5- 5.9	41	21.6	18	22.0	9	15.5	15	26.3	83	21.4
4- 4.9	30	15.8	18	22.0	10	17.2	3	5.2	61	15.8
3- 3.9	26	13.7	8	9.7	14	24.2	7	12.3	55	14.2
2- 2.9										
1- 1.9										
0- 0.9										
Total	190	100.0	82	100.0	58	100.0	57	100.0	387	100.0
Mean*	5.88		5.87		5.59		6.13		5.87	
$SD_{dis.}$	1.48		1.43		1.62		1.41		1.49	

*Freshman-senior difference .25, *PE* .15.
Junior-senior difference .54, *PE* .19.

mean scores are lower than freshmen and sophomores, while the seniors have the highest mean scores of all. This is in contrast with the regular or irregular decrease in scores from freshman to senior which we have noted in most of the institutions studied so far. Here we have a freshman-senior difference in which the higher score is in the senior class! This difference of .25, probable error .15, is not statistically significant. The greatest difference between classes, the junior-senior difference, .54, is still less than three times its probable error of .19. Only small variations exist in the dispersion of scores. Although we find only small differences between classes, Table 6 indicates rather definite differences between insti-

TABLE 6

DIFFERENCES AMONG FRIENDS COLLEGES AS TO STUDENT ATTITUDES TOWARD SUNDAY OBSERVANCE

College	*K*		*L*		*M*		Total	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9								
9- 9.9								
8- 8.9	15	7.7	4	3.3	12	16.4	31	8.0
7- 7.9	32	16.5	12	10.0	21	28.8	65	16.8
6- 6.9	48	24.7	27	22.5	17	23.3	92	23.8
5- 5.9	39	20.1	30	25.0	14	19.2	83	21.4
4- 4.9	30	15.5	24	20.0	7	9.6	61	15.8
3- 3.9	30	15.5	23	19.2	2	2.7	55	14.2
2- 2.9								
1- 1.9								
0- 0.9								
Total	194	100.0	120	100.0	73	100.0	387	100.0
Mean		5.85		5.44		6.65		5.87
$SD_{lits.}$		1.50		1.37		1.32		1.49

tutions. College *M* has a mean score of 6.65, which is .80 above College *K* and 1.21 above College *L*. The mean score for College *M* is not only higher than that for the state universities, but it is also higher than the mean for five of the six Lutheran colleges. Since all three of these institutions are located in the Midwest the difference found cannot be explained in terms of geographic differences.

The attitudes of the 387 students attending three colleges of the Society of Friends may be summarized as follows:

1. The mean scores indicate attitudes toward Sunday observance

which are less strict than those of students at Lutheran colleges and slightly more strict than those of the state universities.

2. Only small class differences exist in either mean scores or in measures of dispersion. None of these differences are statistically significant. Of interest, however, is the increase from freshman to senior in mean scores as contrasted with the opposite condition reported in most institutions considered thus far in this investigation.

3. Definite institutional differences were found which could not be attributed to geographic location. One of these Friends colleges had a mean score higher than the universities and higher than five of the six Lutheran colleges studied.

Methodist University

From among the large number of institutions affiliated with this church body, we present data based on the responses of 437 students at University *N*. The mean score for the university is 5.82, slightly favorable toward Sunday observance. The data from the four classes have been summarized in Table 7 for convenient comparison with the data from the other institutional types. In this Methodist university it will be noted that the freshmen are most favorable toward Sunday observance and the juniors least so. The freshman-senior difference is .59—greater than that of any of the other institutional groups thus far considered in this study. The probable error of this difference is only .06, hence this difference is more than nine times its probable error. The greatest difference between consecutive years in college occurs between sophomore and junior years—at the end of the junior college period. The smallest dispersion is found in the sophomore year and the greatest in the junior year.

Presbyterian College

In this group of 282 students at a Presbyterian college we find attitude scores which resemble rather closely those of the Methodist university reported above. The mean for the entire group of 282 students was 5.76—above the mid-point of the scale. As we turn to the four classes as summarized in Table 7 we note a fairly regular increase in scores from 5.59 as the mean freshman score to 6.18 in the sophomore class, and 6.47 in the junior group. The seniors are higher than freshmen but lower than the other two classes.

TABLE 7

ATTITUDES TOWARD SUNDAY OBSERVANCE BY CLASSES AND BY INSTITUTIONS

Institutions	Freshman		Sophomore		Junior		Senior		Totals		Fresh-Sr.	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*Diff.*	*PE**
State Uni.	5.29	1.47	4.73	1.26	5.06	1.56	4.89	1.45	5.09	1.46	.40	.09
Lutheran	6.09	1.45	6.31	1.49	6.42	1.52	5.87	1.62	6.12	1.53	.22	.08
Friends	5.88	1.48	5.87	1.44	5.59	1.62	6.13	1.41	5.87	1.49	.25	.15
Methodist	5.98	1.51	5.93	1.31	5.35	1.54	5.39	1.42	5.82	1.50	.59	.06
Presbyterian	5.59	1.40	6.18	1.03	6.47	1.51	5.88	1.45	5.76	1.43	*	
Adventist	6.46	1.32					6.44	1.47	6.46	1.34	*	
U. Brethren	6.33	1.43	6.07	1.50	6.14	1.39	5.70	1.40	6.22	1.45	*	
Catholic	5.91	1.36	6.38	.97	6.31	1.56	6.25	1.35	6.16	1.34	*	

*Freshman-senior difference and *PE* not shown for institutions reporting on less than 50 subjects in the senior class.

The greatest dispersion of scores is found in the junior class which also has the greatest mean score.

Seventh Day Adventist

In administering the tests to the 179 students in this Adventist college, students were permitted to substitute the Adventist Sabbath wherever the word "Sunday" occurs in the test. Those who know something of the devotion to religious principles shown by the members of this body will not be surprised to note the rather high mean scores in Table 7. The mean, 6.46, is in the area interpreted as "favoring sabbath day restrictions." This mean score is exceeded by only two institutions of the 18 schools included in this study. Nor is this institution located in the South which has seemed to be a factor in the high scores of other institutions. The freshman and senior classes are almost identical in both mean scores and in the dispersion of scores.

College of the United Brethren

The mean score for the 155 students measured in this college is only slightly above the midpoint of the scale, 6.22. As will be seen from Table 7, the freshmen and seniors are again running "true to form," freshmen highest and seniors having the lowest mean scores. The dispersion of scores varies little from class to class.

Catholic College

This Catholic institution which ranked as the most conservative of the 18 institutions studied (12) does not stand out notably above the other institutions in this area. However, the mean score for the 98 students measured at this Catholic institution is 6.16 as compared with the mean for the entire 18 institutions, 5.77. Although the mean at the Catholic college is slightly higher than that of the entire group of institutions, it is lower than that of the college of the United Brethren, the Adventist college, a Friends college, and three of the Lutheran colleges. It should also be recalled that we are measuring students at a woman's college, hence the small difference in mean scores can be partly attributed to sex differences as we shall note presently. However, the mean score is 1.07 above that of the state universities, more than twice the amount which could be attributed to sex differences. Perhaps the most

encouraging observation to be made from the data concerning this institution, Table 7, is not the mean score, but the direction of class differences. The freshman girls at this college show attitudes less favorable toward Sunday observance than do the freshman students in four of the other seven types of institutions shown in this table. But students who have attended this institution for some time show a different picture. While the freshman score is only 5.91, the seniors at this college show a mean score of 6.25, second only to that of the seniors at Adventist college among all of the institutional types studied.

Sex Differences

For the purpose of answering questions which arise as to possible differences in attitudes between men and women, we are fortunate in having our entire group of 3,749 students rather evenly divided. Our data are based on the responses of 1,724 men and 2,025 women. Are these women students more favorable toward Sunday observance than their male classmates? The data summarized in Table 8 answer in the affirmative. The mean score for women is 5.85 compared with 5.67 for men. Furthermore, this difference is more than five times greater than the probable error of .03, hence may be considered significant. Although for the entire group, women are significantly more favorable toward Sunday observance than men, there are notable exceptions. While women score higher than men in the two lower classes, the men show the greater score in the junior class, and in the senior class the sexes show approximately equal scores. Thus in the two upper classes, women are equaled or excelled by men as contrasted with their consistent lead in the two lower classes. Even more significant from an educational standpoint are the differences between the sexes when it comes to freshman-senior differences. Males who enter college with a score of only 5.67 may be compared with senior males who have a mean score of 5.58, a difference of .09, *PE* .09. In the case of the 2,025 females, however, we find the freshman mean of 6.01 compared with a senior mean of 5.56, a difference of .45, *PE* .06. In other words, the women in the freshman classes are significantly more favorable toward Sunday observance than men, but in the senior classes their scores are practically equal. Men in the junior class are slightly more favorable toward Sunday observance than

TABLE 8

SEX DIFFERENCES IN STUDENT ATTITUDES TOWARD SUNDAY OBSERVANCE

Scale	Freshman		Sophomore		Junior		Senior		Total		
	M.	*F.*	*M.*	*F.*	*M.*	*F.*	M.	F.	M.	F.	Total
10-10.9											
9- 9.9		1			1	1			1	2	3
8- 8.9	61	98	17	15	25	25	20	19	123	157	280
7- 7.9	170	231	41	71	40	38	38	49	289	389	678
6- 6.9	187	241	49	66	39	44	54	51	329	402	731
5- 5.9	202	239	44	81	42	45	50	62	338	427	765
4- 4.9	187	185	44	57	38	49	42	59	311	350	661
3- 3.9	174	122	48	55	46	56	58	65	436	298	624
2- 2.9	1						4		5		5
1- 1.9	1		1						2		2
0- 0.9											
Total	983	1,117	244	345	231	258	266	305	1,724	2,025	3,749
Mean*	5.67	6.01	5.66	5.75	5.79	5.64	5.58	5.56	5.67	5.85	
$SD_{dis.}$	1.53	1.48	1.58	1.50	1.67	1.65	1.62	1.55	1.57	1.52	

*Sex difference in freshman class .34, *PE* .04.
Sex difference for entire group .18, *PE* .03.
Freshman-senior difference, male .09, *PE* .07.
Freshman-senior difference, female .45, *PE* .06.

men in the freshman class, while the reverse is true for women. Furthermore, the difference between freshman and senior males is not significant, while the difference between freshman and senior females is nearly twice as great as necessary for statistical significance.

Although the homogeneity is so nearly the same for the sexes in each class that little significance can be attached to the differences, it is interesting to note that the small differences which do exist indicate the greater homogeneity among women. The standard deviation for women is smaller than for men when we consider the entire group. This measure of dispersion is also smaller for women in each of the four classes without exception.

In conclusion, our data based on a study of 1,724 men and 2,025 women indicate:

1. A significant sex difference, with college women more favorable toward Sunday observance than college men.
2. Junior males scored higher than females, while in the senior classes the sexes were nearly equal on this continuum.
3. The freshman-senior difference among women is significant and in the direction of the less favorable attitude among seniors. Freshman-senior difference among men is not significant.
4. Only small differences in homogeneity exist between men and women, but the differences which do exist are invariably in the direction of greater homogeneity among women.

Summary Based on the Eighteen Colleges and Universities

We began this chapter by posing a number of questions concerning the attitudes of students toward the commandment, *"Remember the Sabbath Day to keep it holy."* We may now conclude by briefly surveying the data from the 18 institutions taken together and listing those inferences which indicate something of an answer to the questions raised. Table 9 shows that the mean score of all students in all classes and institutions is 5.77, indicating a neutral attitude toward Sunday observance. As we look at the summarized data for each of the four classes in all institutions, we find freshmen most favorable toward Sunday observance and seniors least so. The sophomores and juniors have mean scores which are nearly equal and almost exactly midway between the mean freshman and senior scores. The freshman-senior difference for the entire group is .27, which is almost six times greater than the probable error of .05. Thus the seniors are significantly less favor-

TABLE 9

STUDENT ATTITUDES TOWARD SUNDAY OBSERVANCE IN EIGHTEEN COLLEGES AND UNIVERSITIES

Scale	Freshman		Sophomore		Junior		Senior		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9										
9- 9.9	1	0.1			2	0.4			3	0.1
8- 8.9	159	7.5	32	5.4	50	10.2	39	6.8	280	7.5
7- 7.9	401	19.1	112	19.0	78	16.0	87	15.2	678	18.1
6- 6.9	428	20.3	115	19.5	83	17.0	105	18.4	731	19.5
5- 5.9	441	21.0	125	21.2	87	17.8	112	19.6	765	20.4
4- 4.9	372	17.7	101	17.2	87	17.8	101	17.7	661	17.6
3- 3.9	296	14.1	103	17.5	102	20.8	123	21.6	624	16.6
2- 2.9	1	0.1					4	0.7	5	0.1
1- 1.9	1	0.1	1	0.2					2	0.1
0- 0.9										
Total	2,100	100.0	589	100.0	489	100.0	571	100.0	3,749	100.0
Mean*	5.85		5.71		5.72		5.58		5.77	
$SD_{dis.}$	1.51		1.51		1.66		1.56		1.55	

*Freshman-senior difference .27, *PE* .05.

able toward Sunday observance than are freshmen on the whole.

In closing this chapter, we present the following conclusions to which our study seems to have led:

1. Attitudes toward Sunday observance involve not a single clear-cut issue but religious, social, economic, and even legal considerations.

2. Students at state universities indicate attitudes near the neutral part of the scale, with freshmen significantly higher than seniors while the freshman-sophomore difference is still greater and in the same direction. The lowest mean score is in the sophomore group, which is accompanied by the lowest measure of dispersion.

3. Students at the six Lutheran colleges differ from students at the state universities, the mean at the Lutheran institutions being one interval above that of the state universities.

4. A geographic factor seems present. The one state university shows a mean score significantly higher than that of the three state universities in the Midwest. Of the six Lutheran colleges, the smallest mean was for a college in the East, the highest score among the entire group of 18 institutions was for a Lutheran college in the South. Lutheran colleges in the Midwest ranged between the mean scores of the institutions in the East and the South.

5. The mean for the Friends colleges was above that of the state universities and below that of the Lutheran group. In Friends colleges, the class differences were in the direction of higher mean scores for seniors, which is contrary to the direction in most of the others institutions included in this investigation.

6. The attitudes of students at the Methodist, Presbyterian, Adventist, United Brethren, and Catholic colleges were all slightly favorable toward Sunday observance. Of these institutions, the most favorable attitudes toward Sunday observance are indicated at the Adventist college, followed rather closely by students at United Brethren and Catholic institutions.

7. Significant sex differences obtain, with women more favorable toward Sunday observance than men, but with a greater freshman-senior difference in the direction of less favor shown toward Sunday observance by seniors.

8. The attitudes of the 3,749 students in 18 colleges and universities may be described as slightly favorable toward Sunday observance. Seniors as a whole are less favorable toward Sunday observance than are freshmen.

IV. STUDENT ATTITUDES TOWARD THE CHURCH

In this chapter we are dealing with attitudes more fundamental and certainly more personal than in our consideration of Sunday observance. Here it is not a matter of tolerance, the question is not simply one of objective opinion, but it involves an institution which may reveal deep-seated loyalties, sentiments, attitudes, and convictions. The powerful influence of such attitudes has already been pointed out (cf., p. 328). Yet in an area of such far-reaching importance there is much popular skepticism concerning student attitudes. From the more serious studies have come divergent interpretations. The data compiled by Wickey (22) show that 88 per cent of the students attending 1,171 institutions have indicated a church preference. On the other hand the intensive study at Syracuse (7) indicates that 37 per cent of the men and 34 per cent of the women felt that neither church attendance nor a religious belief are necessary in order to lead a good life. The study by Morse (13) and the more extensive study by Thurstone and Chave (20) both indicate attitudes more favorable toward the church. In a study of 674 college seniors, Edwards and colleagues (5) found that only 44 per cent of the men and 55 per cent of the women attended church regularly. On the whole, the picture is none too reassuring to those who are interested in attitudes favorable toward the church.

The present study of attitudes toward the church is based on a 45-item scale constructed by Thurstone and Chave using the technique of equal-appearing intervals (cf., p. 333). The corrected reliability of this scale is .92. Since we are using a measure with a definite scale value for each of the 45 items, we are able to present a mean score for each individual subject rather than a tabulation of frequency of checks on each item. The scale ranges from .5, the most unfavorable attitude score, to 11.0, the most favorable attitude toward the church. Although the authors of this test as well as the test used in measuring attitudes toward "God as an Influence on Conduct" designed these scales with low scores representing attitudes most favorable toward the church or toward God, the scales used here have been revised for the sake of convenient comparisons with the studies of Sunday observance and of attitudes toward God as a reality. This change was made in such a way as to leave exactly

the same interval between items which exist in the author's scale. If comparison is made between the tables reported here and those of other studies using the same tests, this revision of scores must be made for either group of data to make them comparable (this applies only to the data in Chapter IV and in Chapter VI of this study).

We turn now directly to the question as to the attitudes of college and university students toward the church.

State Universities

When we recall that the mean score for most institutions on the Thurstone *Scale for Attitudes Toward Sunday Observance* was near the middle of the scale, between 5 and 6, we are scarcely prepared for the scores presented in Table 10. Based on a scale extending

TABLE 10

Attitudes Toward the Church by Classes in Four State Universities

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	42	8.2	7	3.9	4	2.4	7	4.0	60	5.8
9- 9.9	218	42.6	62	34.8	72	43.1	66	37.9	418	40.6
8- 8.9	149	29.1	56	31.5	42	25.1	46	26.4	293	28.4
7- 7.9	57	11.1	29	16.3	25	15.0	14	8.1	125	12.1
6- 6.9	27	5.3	10	5.6	9	5.4	18	10.3	64	6.2
5- 5.9	12	2.3	7	3.9	7	4.2	13	7.5	39	3.8
4- 4.9	7	1.4	6	3.4	6	3.6	7	4.0	26	2.5
3- 3.9					1	0.6	2	1.2	3	0.3
2- 2.9			1	0.6	1	0.6	1	0.6	3	0.3
1- 1.9										
0- 0.9										
Total	512	100.0	178	100.0	167	100.0	174	100.0	1,031	100.0
Mean*	8.75		8.36		8.38		8.20		8.23	
$SD_{dis.}$	1.20		1.40		1.48		1.65		1.39	

*Freshman-senior difference .55, *PE* .09.

from .5 to 11.0, we note that this group of 1,031 state university students have a mean score of 8.53, decidedly above the midpoint of the scale, indicating attitudes favorable toward the church. The authors interpret this area as "favorable with some reservations." Contrary to the conclusions reported in several studies cited, these university youth do not seem "opposed to institutionalized" religion

as represented by the church. Nor does this mean score conceal great numbers who are opposed to the church. As we examine these data more in detail we note that of the total of 1,031 individuals, only 71 fall below a score of six which is slightly above the midpoint of the scale. Only six persons out of 1,031 have scores of less than four. Turning to the percentage column, a striking contrast is seen in that only seven per cent of this group scores below the midpoint, six, while 93 per cent of these state university students score above this point. On the other hand, 46 per cent of the state university students score in the two highest intervals possible, representing the most favorable attitudes toward the church. For the group as a whole, the mean of 8.53 may become more meaningful by citing a few statements from the scale in this area. *"I believe that the church is necessary, but like all other human institutions, it has its faults." "There is much wrong in my church, but I feel it is so important that it is my duty to help improve it." "I believe that the church practices the Golden Rule fairly well and has a consequent good influence."*

The means for the four classes in the same table do not indicate an "alarming decline" in attitudes toward the church. Although this study does not pretend to measure changes of attitudes, if outstanding changes were prevalent in the group, the freshmen might be expected to be several intervals higher or lower than the seniors who have been on the university campus for a longer period of time. Although not alarming, the mean scores do indicate a modest freshman-senior difference. The freshman mean is 8.75, sophomores and juniors nearly equal with a score of 8.36, and seniors with the less favorable attitude indicated by the score of 8.20. The freshman-senior difference of .55 is almost six times its probable error, hence is statistically significant.

The class differences in the dispersion of scores are, perhaps, more revealing than the means. Inspection of the percentage column shows that 51 per cent of the freshmen compared with only 42 per cent of the seniors are in the two highest intervals of most favorable attitudes toward the church. The standard deviation indicates greatest homogeneity among freshmen, and a gradual decrease in homogeneity as we note the upper classes.

A comparison of the four state universities, Table 11, shows remarkably close agreement in mean scores and in dispersion of

the same interval between items which exist in the author's scale. If comparison is made between the tables reported here and those of other studies using the same tests, this revision of scores must be made for either group of data to make them comparable (this applies only to the data in Chapter IV and in Chapter VI of this study).

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10-10.9	42	8.2	7	3.9	4	2.4	7	4.0	60	5.8
9- 9.9	218	42.6	62	34.8	72	43.1	66	37.9	418	40.6
8- 8.9	149	29.1	56	31.5	42	25.1	46	26.4	293	28.4
7- 7.9	57	11.1	29	16.3	25	15.0	14	8.1	125	12.1
6- 6.9	27	5.3	10	5.6	9	5.4	18	10.3	64	6.2
5- 5.9	12	2.3	7	3.9	7	4.2	13	7.5	39	3.8
4- 4.9	7	1.4	6	3.4	6	3.6	7	4.0	26	2.5
3- 3.9					1	0.6	2	1.2	3	0.3
2- 2.9			1	0.6	1	0.6	1	0.6	3	0.3
1- 1.9										
0- 0.9										
Total	512	100.0	178	100.0	167	100.0	174	100.0	1,031	100.0
Mean*	8.75		8.36		8.38		8.20		8.23	
$SD_{dis.}$	1.20		1.40		1.48		1.65		1.39	

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TABLE 10

Attitudes Toward the Church by Classes in Four State Universities

Scale	Freshman		Sophomore		Junior		Senior		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	42	8.2	7	3.9	4	2.4	7	4.0	60	5.8
9- 9.9	218	42.6	62	34.8	72	43.1	66	37.9	418	40.6
8- 8.9	149	29.1	56	31.5	42	25.1	46	26.4	293	28.4
7- 7.9	57	11.1	29	16.3	25	15.0	14	8.1	125	12.1
6- 6.9	27	5.3	10	5.6	9	5.4	18	10.3	64	6.2
5- 5.9	12	2.3	7	3.9	7	4.2	13	7.5	39	3.8
4- 4.9	7	1.4	6	3.4	6	3.6	7	4.0	26	2.5
3- 3.9					1	0.6	2	1.2	3	0.3
2- 2.9			1	0.6	1	0.6	1	0.6	3	0.3
1- 1.9										
0- 0.9										
Total	512	100.0	178	100.0	167	100.0	174	100.0	1,031	100.0
Mean*	8.75		8.36		8.38		8.20		8.23	
$SD_{dis.}$	1.20		1.40		1.48		1.65		1.39	

*Freshman-senior difference .55, *PE* .09.

from .5 to 11.0, we note that this group of 1,031 state university students have a mean score of 8.53, decidedly above the midpoint of the scale, indicating attitudes favorable toward the church. The authors interpret this area as "favorable with some reservations." Contrary to the conclusions reported in several studies cited, these university youth do not seem "opposed to institutionalized" religion

as represented by the church. Nor does this mean score conceal great numbers who are opposed to the church. As we examine these data more in detail we note that of the total of 1,031 individuals, only 71 fall below a score of six which is slightly above the midpoint of the scale. Only six persons out of 1,031 have scores of less than four. Turning to the percentage column, a striking contrast is seen in that only seven per cent of this group scores below the midpoint, six, while 93 per cent of these state university students score above this point. On the other hand, 46 per cent of the state university students score in the two highest intervals possible, representing the most favorable attitudes toward the church. For the group as a whole, the mean of 8.53 may become more meaningful by citing a few statements from the scale in this area. *"I believe that the church is necessary, but like all other human institutions, it has its faults." "There is much wrong in my church, but I feel it is so important that it is my duty to help improve it." "I believe that the church practices the Golden Rule fairly well and has a consequent good influence."*

The means for the four classes in the same table do not indicate an "alarming decline" in attitudes toward the church. Although this study does not pretend to measure changes of attitudes, if outstanding changes were prevalent in the group, the freshmen might be expected to be several intervals higher or lower than the seniors who have been on the university campus for a longer period of time. Although not alarming, the mean scores do indicate a modest freshman-senior difference. The freshman mean is 8.75, sophomores and juniors nearly equal with a score of 8.36, and seniors with the less favorable attitude indicated by the score of 8.20. The freshman-senior difference of .55 is almost six times its probable error, hence is statistically significant.

The class differences in the dispersion of scores are, perhaps, more revealing than the means. Inspection of the percentage column shows that 51 per cent of the freshmen compared with only 42 per cent of the seniors are in the two highest intervals of most favorable attitudes toward the church. The standard deviation indicates greatest homogeneity among freshmen, and a gradual decrease in homogeneity as we note the upper classes.

A comparison of the four state universities, Table 11, shows remarkably close agreement in mean scores and in dispersion of

TABLE 11

STUDENT ATTITUDES TOWARD THE CHURCH AS SEEN IN EACH OF FOUR STATE UNIVERSITIES

College	*A*		*B*		*C*		*D*		Totals	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	19	6.0	6	5.7	33	6.0	2	3.7	60	5.8
9- 9.9	101	31.8	48	45.3	243	43.9	26	48.1	418	40.6
8- 8.9	104	32.7	33	31.1	143	25.8	13	24.0	293	28.4
7- 7.9	50	15.7	11	10.4	58	10.5	6	11.1	125	12.1
6- 6.9	22	6.9	6	5.7	32	5.8	4	7.4	64	7.2
5- 5.9	12	3.8			26	4.7	1	1.9	39	3.8
4- 4-9	9	2.8	1	0.9	15	2.7	1	1.9	26	2.5
3- 3.9			1	0.9	2	0.4			3	0.3
2- 2.9	1	0.3			1	0.2	1	1.9	3	0.3
1- 1.9										
0- 0.9										
Totals	318	100.0	106	100.0	553	100.0	54	100.0	1,031	100.0
Mean	8.40		8.76		8.56		8.55		8.53	
$SD_{dia.}$	1.37		1.15		1.42		1.47		1.39	

scores. State University *B*, which is located in the South, is most favorable toward the church with a score of 8.76, while University *A* in the Midwest is lowest. Again the group with the greatest score, attitudes most favorable toward the church, shows the smallest dispersion of scores from that mean.

In summarizing the data from four state universities we find not the loss of respect for the church sometimes alleged, but our data seem rather to lead to the following conclusions:

1. The attitudes of these university students toward the church may be described as "favorable with reservations." In no class and in no university do we find the mean below 8 on a .5 to 11.0 scale.

2. Small class differences are apparent. The freshmen are more favorable toward the church than are seniors, the difference being one-half of one interval and statistically significant. The freshman class reveals the smallest dispersion of scores and the seniors the greatest.

3. The three Midwestern universities are nearly equal as to mean scores, while the state university in the South has the highest mean of the group.

Lutheran Colleges

In this group of church-affiliated colleges, we find attitudes toward the church still more favorable. For the 1,176 students who took this test in the six Lutheran colleges, we find a mean score of 9.01—within two intervals of the very peak of the scale! Although the attitudes of these students toward Sunday observance were near the midpoint or "neutral" area of the scale, when it comes to the church, their attitudes are more favorable than on any of the other tests given in this study. However, the institutions cannot be credited with instilling attitudes producing such high scores inasmuch as the scores for each class are approximately equal and the freshman mean is even slightly higher than that of the upper classes. The presence of attitudes so strongly favorable toward the church in these colleges can probably be attributed to a selective factor as far as the freshmen are concerned. The fact that there is no significant freshman-senior difference, however, does seem related to the type of institution. It is rather surprising to find that 66 per cent of the freshmen are in the two highest intervals of the scale. Scarcely less amazing is the fact that only one out of 214 seniors scored below six, which is slightly above the mid-point of the scale. For that matter, only 11 persons out of the 1,176 students in the six colleges are below the mid-point of the scale. None of the class differences are significant. The freshman-senior difference is only .13, *PE* .05.

A study of Table 12 reveals that these students are by no means unanimous in their attitude. The distributions in each class indicate the individual differences. Yet, the dispersion of scores as measured by the standard deviation of these distributions is exceedingly small—less than 1 in every case. This group as a whole and by classes is evidently more homogeneous than the students at the state universities whose standard deviation for the group was 1.39 with no class less than 1.16.

Only small institutional differences are noted as we study Table 13. It is interesting to note that the smaller mean scores are from institutions east of Chicago, and the scores representing attitudes more favorable toward the church are west of the same city. The mean scores for all of the six institutions are in the scale area of such statements: *"I feel the church is trying to adjust itself to a scientific*

TABLE 12

STUDENT ATTITUDES TOWARD THE CHURCH IN SIX LUTHERAN COLLEGES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	43	6.7	9	4.8	5	3.6	10	4.7	67	5.7
9- 9.9	379	59.5	84	45.1	85	61.1	120	56.1	668	56.8
8- 8.9	161	23.7	72	38.7	35	25.2	53	24.7	311	26.4
7- 7.9	38	6.0	15	8.1	11	7.9	19	8.9	83	7.0
6- 6.9	20	3.1	2	1.1	3	2.2	11	5.1	36	3.1
5- 5.9	2	0.3	2	1.1					4	0.3
4- 4.9	1	0.2	2	1.1					3	0.3
3- 3.9	2	0.3					1	0.5	3	0.3
2- 2.9	1	0.2							1	0.1
1- 1.9										
0- 0.9										
Totals	637	100.0	186	100.0	139	100.0	214	100.0	1,176	100.0
Mean*	9.07		8.87		9.06		8.94		9.01	
$SD_{dis.}$	.96		.95		.78		.98		.94	

*Freshman-senior difference .13, *PE* .05.

TABLE 13

A COMPARISON OF LUTHERAN COLLEGES AS TO STUDENT ATTITUDES TOWARD THE CHURCH

College / Scale	*E* No.	*E* Pct.	*F* No.	*F* Pct.	*G* No.	*G* Pct.	*H* No.	*H* Pct.	*I* No.	*I* Pct.	*J* No.	*J* Pct.
10-10.9	7	3.6	16	7.4	5	2.8	17	7.0	7	8.5	15	5.7
9- 9.9	88	45.4	136	62.7	100	55.9	141	58.0	43	52.4	160	61.3
8- 8.9	69	35.6	46	21.2	53	29.6	64	26.4	25	30.5	54	20.7
7- 7.9	17	8.8	16	7.4	17	9.5	10	4.1	5	6.1	18	6.9
6- 6.9	8	4.1	3	1.3	4	2.2	6	2.5	2	2.5	13	5.0
5- 5.9	2	1.0					1	0.4			1	0.4
4- 4.9	2	1.0					1	0.4				
3- 3.9	2	1.0					2	0.8				
2- 2.9							1	0.4				
1- 1.9												
0- 0.9												
Totals	194	100.0	217	100.0	179	100.0	243	100.0	82	100.0	261	100.0
Mean	8.75		9.17		8.98		9.03		9.09		9.05	
$SD_{dis.}$	1.08		.77		.79		1.08		.83		.92	

world and deserves support." Some institutional differences exist in the dispersion of scores, however none of the measures indicate so wide a dispersion as found in the state universities.

We may summarize briefly by pointing to two conclusions which seem supported by these data.

1. These students show higher mean scores in their attitudes toward the church than in any other area in which they were tested. The mean of 9.01 indicates attitudes decidedly favorable toward the church.

2. Only small differences are found between classes in either mean scores or in measures of dispersion. Differences between institutions are not marked.

Friends Colleges

In this group of three institutions we find a mean score for the group of 8.73 (Table 14). This score is slightly lower than the

TABLE 14

Attitudes Toward the Church in Three Friends Colleges

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	6	3.2	3	3.7	1	1.7			10	2.6
9- 9.9	91	47.9	51	63.0	26	44.8	29	50.9	197	51.0
8- 8.9	60	31.6	15	18.5	14	24.1	14	24.5	103	26.7
7- 7.9	19	10.0	9	11.1	8	13.8	8	14.0	33	11.4
6- 6.9	11	5.7	3	3.7	4	6.9	2	3.5	20	5.2
5- 5.9	1	0.5			3	5.2	1	1.8	5	1.3
4- 4.9	2	1.1			2	3.5	2	3.5	6	1.5
3- 3.9										
2- 2.9							1	1.8	1	0.3
1- 1.9										
0- 0.9										
Total	190	100.0	81	100.0	58	100.0	57	100.0	386	100.0
Mean*	8.77		9.02		8.41		8.50		8.73	
$SD_{dis.}$	1.04		.88		1.39		1.46		1.16	

*Freshman-senior difference .27, *PE* .14.

mean for the six Lutheran colleges and slightly higher than the mean for the four state universities. The significant fact is that it is more than two intervals higher than the mid-point of the scale. This mean represents attitudes favorable toward the church with some reservations. It is interesting to note that almost 97 per cent of these students in three Friends colleges have scores above

the mid-point of the scale. Only 12 persons out of the 386 who took this test fell below the sixth interval and 11 of these were between four and six, the area described by the authors of the test as "wavering."

As we turn to a comparison of the four classes, we note that the freshman mean is approximately the same as that for the group as a whole, 8.77. The sophomores have the highest mean, 9.02, and show attitudes most favorable toward the church among these classes. The juniors have the lowest mean score for the group, while the seniors again reverse the trend and show a mean of 8.50. The freshman-junior difference for this group is only .27 and is not significant. In the dispersion of scores, we again find the group with the highest mean score showing least dispersion about that mean, in this case the sophomores. Excepting the sophomores, the freshmen maintain the position of smallest dispersion as we have found in most of the institutions studied thus far. The seniors present the greatest dispersion of scores as indicated by a standard deviation of 1.46.

Institutional differences as shown in Table 15 are not outstanding

TABLE 15

INSTITUTIONAL DIFFERENCES IN ATTITUDES TOWARD THE CHURCH IN THREE FRIENDS COLLEGES

College	*K*		*L*		*M*		Total	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	7	3.6			3	4.1	10	2.6
9- 9.9	105	54.4	49	40.8	43	58.9	197	51.0
8- 8.9	42	21.8	40	33.3	21	28.7	103	26.7
7- 7.9	21	10.8	19	15.8	4	5.5	44	11.4
6- 6.9	12	6.2	7	5.9	1	1.4	20	5.2
5- 5.9	2	1.1	3	2.5			5	1.3
4- 4.9	3	1.6	2	1.7	1	1.4	6	1.5
3- 3.9								
2- 2.9	1	0.5					1	0.3
1- 1.9								
0- 0.9								
Total	193	100.0	120	100.0	73	100.0	386	100.0
Mean	8.76		8.49		9.03		8.73	
$SD_{dis.}$	1.23		1.14		.89		1.16	

in themselves. In connection with the conservative-radical attitudes (15) and the attitudes toward Sunday observance (cf., p. 345), it

is interesting to note that College *M* is again in the lead with a mean score of 9.03 compared with 8.76 at College *K* and 8.49 at College *L*. College *M* also shows the smallest measure of dispersion of scores.

In conclusion, the attitudes of the students at these Friends colleges seem to be more favorable toward the church than those of student groups at the state universities, and slightly less so than the students at the Lutheran colleges.

Methodist University

Turning to the composite table (Table 16) it will be seen that the mean for this Methodist university, 891, is slightly higher than the mean for the Friends colleges and less favorable toward the church than the six Lutheran colleges taken together. Let it be remembered, however, that these terms, "higher" and "lower" are in terms of hundreths of an interval—all of these mean scores are definitely above the mid-point of the scale. Less than two per cent of these 437 students at Methodist University fall below the mid-point of the scale, while 98 per cent are above six on the scale. Not one student was found in the two lower intervals, most antagonistic toward the church, but 263 persons or 60 per cent of the group are in the two upper intervals most favorable toward the church. The differences between classes again are small, but like the Friends colleges these students also show the highest score in the sophomore year. Freshmen and seniors are nearly equal in mean scores, but represent the extremes in dispersion of scores with freshmen showing the greatest dispersion and the seniors the smallest among the four classes.

Presbyterian College

The 258 students tested in this institution show a mean score of 8.96. As will be noted in Table 16, this mean is approximately the same as that of the Methodist University just considered. This group clusters more closely about this mean, however, as is indicated by the standard deviation of only .92 for the group. An indication of the distribution is further seen from the fact that there is not one person in the three lowest intervals of the scale. On the other hand, 98 per cent of the group are in the three highest intervals, most favorable toward the church. The class differences are small. Due to the rather small number of students in the upper classes, we can be less certain of a random sampling, hence these

TABLE 16

SUMMARY OF MEASURES OF ATTITUDES TOWARD THE CHURCH BY CLASSES AND BY INSTITUTIONS

Institution	Freshman		Sophomore		Junior		Senior		Totals		Fresh-Sr.	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*Diff.*	*PE*
State Uni.	8.75	1.20	8.36	1.40	8.38	1.48	8.20	1.65	8.53	1.39	.55	.09
Lutheran	9.07	.96	8.87	.95	9.06	.78	8.94	.98	9.01	.94	.13	.05
Friends	8.77	1.04	9.02	.88	8.41	1.39	8.50	1.46	8.73	1.16	.27	.14
Methodist	8.89	1.10	9.10	.92	8.86	1.05	8.82	.86	8.91	1.04	.07	.09
Presbyterian	8.93	.87	8.88	1.44	8.96	1.12	9.28	.42	8.96	.92	*	
Adventist	9.34	.84					9.32	.78	9.34	.83		
U. Brethren	9.20	.78	8.97	1.18	9.07	.73	8.70	1.17	9.11	.90		
Catholic	9.85	.74	9.96	.71	10.12	.58	10.13	.48	9.98	.67		

*Freshman-senior difference and *PE* not shown for institutions reporting on less than 50 subjects in either freshman or senior classes.

differences are not being considered. Freshmen and seniors show the smallest dispersion, while sophomores and juniors show somewhat higher deviations from the mean.

Adventist College

Judging by the data from the 179 students who took this test, this institution seems to have attitudes more favorable toward the church than any other institution included in this study with only one exception, that of the Catholic college. The freshman mean is 9.34, while the small senior class shows a mean of approximately the same value. An interesting bi-modal curve was found in the freshman distribution in which frequencies are entirely missing for two intervals, six, and seven. The strongly favorable attitude toward the church is seen rather conclusively from the fact that 98 per cent of these freshmen are in the three highest intervals of the scale.

United Brethren

The mean score for the 155 students tested in this institution is 9.11, indicating attitudes decidedly favorable toward the church. The close agreement of these students in their attitudes toward the church is evident from the fact that 92 per cent of these persons have mean scores falling within the three highest intervals of the scale. Only four persons fall below the mid-point of the scale.

Among the four classes, we find the highest mean score again in the freshman group and the smallest in the senior class. The decrease from freshman to senior is fairly regular except for the reversal between sophomore and junior years. Although the senior class is far too small for reliable conclusions, we may note the usual lower score on the part of seniors compared with freshmen, in this case, a difference of .50.

Catholic College

This group of 98 students was found to be most conservative among the 18 institutions studied (15). As will be seen from Table 16, these same students also have the highest mean scores, indicating the most favorable attitude toward the church. The mean for this college is 9.98, next to the highest interval possible on this scale! Furthermore, 56 per cent of the group is in the

very highest interval which is characterized by checking of such statements as *"I feel the church is the greatest agency for the uplift of the world." "I regard the church as the most important institution in the world outside of the home."* In considering these high scores of students at Catholic College it may be objected that part of this high score is due to the fact that this college includes only women. As will be seen shortly, sex differences do exist and women do score higher than men. However, the correction to be applied to this score for comparison with coeducational groups will be extremely small, since the difference between all males and all females is only .33 of one interval. Sex differences then in no wise account for the very high mean shown.

Although the numbers again are too small for the formulation of definite conclusions, it is interesting to note the regular *increase* in mean scores as one studies the columns from freshman to senior. In most of the other institutions studied we have noted decreasing scores as we consider the upper classes. Instead of a decline, we have here an increase from year to year with a total freshman-senior difference of .28. All of the measures of dispersion are exceedingly small and decrease steadily as one studies the upper classes—a decline in dispersion of scores, class by class, as the mean scores increase.

Sex Differences

Women are not only more conservative than men (15) but we have also noted that women are more favorable toward Sunday observance than men (cf., p. 349). What of their attitudes toward the church? Table 17 presents data indicating that college women are also significantly more favorable toward the church than are men. In the right hand columns we see that the 2,017 women have a mean score of 9.03 as compared with the mean of 8.70 for the 1,703 men. This difference of .33 is more than 16 times the probable error of the difference, so may be considered four times greater than necessary for statistical significance. Not only are women significantly more favorable in their attitudes toward the church than men, but they are more homogeneous in this more favorable attitude. This may be seen in two ways. By looking at the frequency columns we see the smaller number of women in all intervals below nine and the greater number of women above

TABLE 17

SEX DIFFERENCES IN ATTITUDES TOWARD THE CHURCH BASED ON DATA FROM EIGHTEEN INSTITUTIONS

Scale	Freshman		Sophomore		Junior		Senior		Total		
	M.	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	Total
10-10.9	480	639	89	191	115	130	2	26	55	197	252
9- 9.9	41	117	8	31	4	23	133	149	817	1,109	1,926
8- 8.9	283	263	84	76	58	57	71	68	496	464	960
7- 7.9	97	64	38	27	28	26	25	21	188	138	326
6- 6.9	54	21	5	12	9	9	17	18	85	60	145
5- 5.9	15	6	5	5	6	4	7	8	33	23	56
4- 4.9	7	6	7	3	5	5	1	8	20	22	42
3- 3.9	3	1				1	2	1	5	3	8
2- 2.9	1		1			1	2		4	1	5
1- 1.9											
0- 0.9											
Total	981	1,117	237	345	225	256	260	299	1,703	2,017	3,720
Mean*	8.78	9.14	8.53	9.01	8.67	8.85	8.62	8.78	8.70	9.03	8.88
$SD_{div.}$	1.12	.93	1.25	1.07	1.20	1.30	1.29	1.35	1.18	1.09	1.14

*Sex difference in freshman class .36, *PE* .03.
Sex difference in senior class .16, *PE* .07.
Sex difference for entire group .33, *PE* .02.
Freshman-senior difference, male .16, *PE* .06.
Freshman-senior difference, female .36, *PE* .05.

this same item which includes the measures near the mean score. We may also consider the standard deviations from the arithmetic mean, which is 1.09 for the women compared with 1.18 for the men. But are these sex differences constant through the four college classes? In the freshman class we note a sex difference of .36 with a *PE* of only .03, hence significant. Furthermore the dispersion of scores among freshman women is less than among first year men, as measured by the standard deviation of only .93 among women compared with 1.12 for men. In the sophomore class, both men and women have lower scores but the sex difference is greater than in the freshman year and the difference is significant. In the junior year the sex difference is only .18 while in the senior year sex differences have been further diminished. Here the difference is only .16 with a *PE* of .07, hence not significant.

These differences may become more obvious by considering freshman-senior differences for each sex separately. In Table 17 we note that for males, the freshman-senior difference is .16 with a *PE* of .06, hence not significant. On the other hand, the freshman-senior difference for women is .36, which with a *PE* of .06 is somewhat greater than needed for statistical significance. From these data it seems clear that the largest part of the freshman-senior difference in attitudes scores in this area must be attributed to college women. This observation obviously applies only to the group as a whole and not necessarily to individual institutions. But it does mean that for the group as a whole, women are decidedly more favorable toward the church when they enter college as freshmen, but as seniors, women are not significantly higher in attitudes toward the church than men. As seniors, these women have mean scores the same value as those of freshmen males.

That women should be higher than men on this continuum has been indicated in other studies. The Syracuse study (7) indicates that women are more favorable toward the church than men. The study by Thurstone and Chave (20), using the same scale employed here, likewise indicates sex differences roughly comparable to those of this study. Translating their data to make high scores read favorable and low scores unfavorable toward the church, their 612 men have a score of 6.98 and the 419 women a score of 7.33—a sex difference of .35 with the women more favorable toward the church. This is approximately the same sex difference, .33, which we found

among our group of 3,720 students. This close approximation of sex differences found in the two studies is the more remarkable when we consider that the 3,720 students considered in this study have mean scores more than an entire interval higher than the Chicago group.

This survey of data seems to substantiate the following conclusions:

1. Sex differences in attitudes toward the church not only exist, but *these differences are statistically significant for the group as* a whole.

2. The sex differences are not constant through the four classes, but vary from class to class. In the freshman and sophomore years the sex differences are statistically significant, while they are not so in the senior class.

3. The largest part of the freshman-senior difference for the group as a whole must be attributed to college women. As seniors, the mean score for women is the same as for freshman males.

4. Women show less dispersion of scores as freshmen and sophomores, but their deviations from the mean are greater than those of men in the junior and senior classes.

5. Certain other studies have verified the existence of sex differences in the field of attitudes. One study based on the same test used here and administered to 1,031 students gave almost exactly the same sex difference for that group which we found in this group of 3,720 students, although our mean scores for both sexes are more than one interval higher.

Summary of Data from Eighteen Institutions

In summary, what can be said as to the attitudes of college and university students toward the church? The data presented from four state universities, from six Lutheran colleges, from three Friends colleges, and from five other church affiliated colleges have already indicated the answer. In Table 18, the mean score for the entire group of 3,720 students is 8.88. This score is almost three intervals above the mid-point of the scale and may be characterized as definitely favorable toward the church. As a typical statement from this area on the scale we may cite: *"There is much wrong in my church, but I feel it is so important that it is my duty to help improve it."* Inspection of the column of percentages in Table 18 reveals that *no individual* scored in the most antagonistic interval,

TABLE 18

ATTITUDES TOWARD THE CHURCH IN EIGHTEEN COLLEGES AND UNIVERSITIES

Scale	Freshman		Sophomore		Junior		Senior		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	158	7.5	39	6.7	27	5.6	28	5.0	252	6.9
9- 9.9	1,119	53.3	280	28.0	245	50.9	282	50.4	1,926	51.8
8- 8.9	546	26.0	160	27.5	115	23.9	139	24.9	960	25.8
7- 7.9	161	7.7	65	11.2	54	11.2	46	8.2	326	8.8
6- 6.9	75	3.6	17	2.9	18	3.8	35	6.3	145	3.9
5- 5.9	21	1.0	10	1.7	10	2.1	15	2.7	56	1.5
4- 4.9	13	0.6	10	1.7	10	2.1	9	1.6	42	1.1
3- 3.9	4	0.2			1	0.2	3	0.5	8	0.2
2- 2.9	1	0.1	1	0.2	1	0.2	2	0.4	5	0.1
1- 1.9										
0- 0.9										
Total	2,098	100.0	562	100.0	481	100.0	559	100.0	3,720	100.0
Mean*	8.97		8.81		8.77		8.70		8.88	
$SD_{dts.}$	1.04		1.17		1.25		1.33		1.14	

*Freshman-senior difference .27, *PE* .04.

while six per cent of the group scored in the most favorable interval at the top of the scale. Furthermore, only 55 persons scored in the lowest four intervals compared with 3,464 persons scoring in the upper four intervals.

When all of the data are summarized, as in Table 18, it is rather interesting to note the regular decrease in scores from 8.97, the mean for freshmen, to 8.81 for the sophomores, then 8.77 for the juniors and the lowest mean score, 8.70 for the seniors. The freshman-senior difference of .27, *PE* .04 is significant. A similar trend was noted in the Thurstone and Chave study (20) based on 889 University of Chicago students. Freshmen were highest with a mean of 7.08 followed by sophomores with 6.47 and seniors with 6.72. In spite of lower scores, the University of Chicago students varied only slightly from the trend in this group. Incidentally, the University of Chicago Divinity students showed a mean of 8.67, which is almost as high as the mean for our entire group. Table 18 reveals a definite increase in dispersion of scores from freshmen to seniors. Apparently the lower the scores, the greater the dispersion when we consider groups of this size.

General conclusions as to student attitudes toward the church may be presented as follows:

1. In contrast with reports from several studies, our data point to student attitudes definitely favorable toward the church.

2. Students at the state universities are definitely above the midpoint of the scale in their attitudes toward the church and may be described as "favorable with reservation." In no class and in no university did we find the mean below eight on a 0.5 to 11.0 scale.

3. A significant freshman-senior difference in the direction of less favorable attitudes toward the church on the part of seniors obtains at these universities. Freshmen are most homogeneous and seniors least as measured by the standard deviation.

4. A geographic factor seems present. The three Midwestern universities show very similar attitude means, while the one state university in the South has a significantly higher mean.

5. Students at six Lutheran colleges show higher mean scores in their attitudes toward the church than in any other area in which they were tested. The mean of 9.01 for the 1,176 students is decidedly favorable toward the church.

6. Students at Friends colleges were more favorable toward the church than students at the state universities as a group, but they were slightly less favorable than students at Lutheran colleges. Friends colleges show institutional differences, College *M* having a mean of 9.03 indicating attitudes very favorable toward the church.

7. Students at Methodist University, at the Presbyterian college, and at a college of the United Brethren have mean scores indicating attitudes favorable toward the church. The means, 8.91, 8.96, and 9.11 and the small measures of dispersion indicate that students are fairly homogeneous in their strong church attitudes.

8. The Adventist college is more favorable toward the church than any of the other colleges studied with the one exception, that of the Catholic college. The mean for the Catholic college is 9.98, only one interval less than the highest score possible on the scale. A reversal of the usual trend is also found in the Catholic college where a higher mean score is found among seniors than among freshmen.

9. Sex differences not only exist in this attitude area, but they are significant for the group as a whole. Sex differences are greatest in the freshman and sophomore years, in which classes the sex differences are statistically reliable, while in the two upper classes the differences are small and not reliable. In other words, the

more favorable attitudes shown by women toward the church during freshman and sophomore years are not found in the upper classes where the mean scores for women approximate those of men. Women are more homogeneous in their attitudes toward the church in the freshman and sophomore years, but during their junior and senior years their dispersion of scores is greater than those of men in the same classes.

10. For the 3,720 subjects in 18 institutions, we find a mean score of 8.88 which indicates attitudes favorable toward the church with some reservations. With only 55 persons scoring in the lowest four intervals compared with 3,464 persons scoring in the upper four intervals, the favor in which the church is held by students is quite emphatic.

11. For the entire group, the highest mean score is found in the freshman year and a decreased score in each of the upper classes. The freshman-senior difference for the entire group is small but significantly in the direction of less favorable attitudes among the seniors.

From this study of attitudes toward the church, we turn now to a consideration of student attitudes toward the reality of God.

V. STUDENT ATTITUDES TOWARD THE REALITY OF GOD

We have considered student attitudes toward Sunday observance, student attitudes toward the church, but obviously the whole question of theism is fundamental to the study of either of the other two areas. What are students' attitudes toward God as a reality? Since the attitudes toward this issue influence attitudes in so many other fields we actually have here the crux of the whole question of religion on the campus.

Of the previous studies made concerning this question, we are reminded of the report of Leuba (12) in 1916. According to this report, approximately 82 per cent of the women and only 55 per cent of the men believed in a personal God. Furthermore, it is reported that 32 per cent of the men and 17 per cent of the women believed that the existence or non-existence of God would make no difference in their lives. Edwards, Artman, and Fisher (5), in a study of 600 seniors in 23 colleges found only 40 per cent of the seniors expressing a belief in a personal God.

Since the *Syracuse Reaction Study* (7) is more recent and has been rather widely cited it seems proper to note their results as they relate to the present chapter. The Syracuse report indicates *not only a low percentage of students (21%), believing in a personal* God, but a decided shift from freshman to senior year. To be exact, the tabulations of these authors show 25.8 per cent of freshmen compared with 14.7 per cent of seniors expressing a belief in a personal creator. A concept of God as a being working with nature . . . "and since prayer affects our moral attitude toward nature, we are in communion with Him when we pray," was a concept acceptable to 42 per cent of this group of university students. The next lower group among the 1,321 students checked a statement which the authors summarize as follows: "Vast impersonal, spiritual force or principle throughout nature and in man incapable of being swayed or communicated with through prayer." It is thus seen that only 63 per cent of the 1,321 Syracuse students checked *either* the statement of a personal God *or* the concept of God as one to whom prayer is a matter of adjusting attitudes to nature. The latter concept, a nature god with whom communication through prayer is possible, can scarcely be interpreted as a belief in God as the term is understood in Christian churches, either Catholic or Protestant.

Then the small percentage (21%), of students expressing a belief in a *personal* God contrasts quite strongly with the attitudes we have seen students express in the present study toward the church. Nor does it seem reasonable that the Syracuse student group should vary greatly from other student groups in this respect.

Perhaps an examination of the seven items which the Syracuse students were permitted to check on this issue will furnish the explanation for the contrast between their data and those presented in this study. The statements checked by students are found on page 259 of the published report. The item expressing a belief in a personal creator is given in part:

> "I believe that the ultimate power of the universe is . . ." "Although his nature is goodness, nevertheless He rules by might." "We should, therefore, obey Him and seek His favor and protection. . . ."

Obviously many persons who do believe in a personal God would still be unable to check this statement. The part of the statement following the word "nevertheless" includes ideas contrary to the present concept of a personal God of love and grace. A faith in a God of love would not permit checking this statement—particularly would this be true for those whose concept of God is based largely on the teachings of Christ. The last statement, *"We should, therefore, obey Him and seek His favor . . ."* must likewise be unacceptable to those who believe in a personal God of love and not in one of fear who rules by might whom we should *therefore* obey. The next alternative for the Syracuse students is the "nature God" and from there on the remaining five statements are agnostic or purely mechanistic. Hence it does not seem surprising that only 21 per cent of the Syracuse students could express belief in a personal God, since apparently no opportunity was given to check a statement of God without the limiting conditions cited. As a matter of fact, 181 students out of 1,502 either failed to answer this section of the study or declined to do so. That the present study may differ rather sharply from the Syracuse report is then not surprising.

What are the attitudes toward the reality of God among the 3,649 students included in this chapter of the present study? As a basis for an answer to this fundamental question, we turn to the data from the Chave and Thurstone scale for measuring *Attitude*

Toward God (The Reality of God). This scale ranges from 0.5 to 10.4 with the higher score representing attitudes the more favorable toward the reality of God. The authors of the tests present the following interpretation of scores: 4.0 to 4.9 indicates disbelief in God; 5.0 to 5.9 is the neutral, hesitant, or agnostic attitude; 6.0 to 6.9 is slightly favorable to the God concept; 7.0 to 7.9 indicates belief in God; 8.0 to 10.4 represents a strong religious attitude toward God. Below 4.0 we have varying degrees of atheistic and antagonistic attitudes.

On the basis of data from this 20-item scale we turn now to the attitudes of 1,013 students attending four state universities.

State Universities

Table 19 presents a picture of university student attitudes toward Deity which is decidedly different from that reported in the studies

TABLE 19

Student Attitudes Toward the Reality of God in Four State Universities

Scale	Freshman		Sophomore		Junior		Senior		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	6	1.2			2	1.2			8	0.8
9- 9.9	50	10.0	18	10.3	17	10.2	14	8.1	99	9.8
8- 8.9	204	41.6	54	30.9	52	31.1	51	29.5	364	35.9
7- 7.9	137	27.5	51	29.1	51	30.5	56	32.3	295	29.1
6- 6.9	61	12.3	26	14.9	24	14.4	21	12.1	132	13.0
5- 5.9	15	3.0	9	5.1	6	3.6	8	4.6	38	3.8
4- 4.9	10	2.0	12	6.9	6	3.6	15	8.7	43	4.2
3- 3.9	7	1.4	4	2.3	7	4.2	6	3.5	24	2.4
2- 2.9	1	0.2	1	0.5	2	1.2			4	0.4
1- 1.9	4	0.8					2	1.2	6	0.6
0- 0.9										
Total	498	100.0	175	100.0	167	100.0	173	100.0	1,013	100.0
Mean*	7.79		7.44		7.50		7.28		7.60	
SD_{data}	1.35		1.48		1.55		1.62		1.47	

*Freshman-senior difference .51, *PE* .09.

just cited. On the basis of the 20-item scale already described, we find our 1,013 state university students have a mean score of 7.60, which indicates a belief in God. But, does this "belief in God" indicate a personal God or a general "nature God?" Perhaps the best in interpretation of the value of this mean score can be

had by citing some of the statements directly from the area in which this mean is found. *"I have a strong desire to believe in God." "My idea of God develops with experience." "I believe in God but my idea of God is vague." "I trust in God to support the right and condemn the wrong."* These statements would seem to indicate attitudes toward a rather personal God. As we look at the distribution of these state university students in Table 19 we find only 77 persons or seven per cent of the group scoring below 5.0, the area which can be described as disbelieving or atheistic. On the other hand, 10 per cent of these students are in the two highest intervals indicative of the strongest religious attitudes toward God. That the students differ in their attitudes is, of course evident. To make our data comparable with those of other students of this question we may point to the fact that 75 per cent of these students score above 7.0, expressing a belief in God while approximately 25 per cent scored below this point on the scale. From that standpoint, this study is in rather close agreement with that of Leuba, but it reveals much higher scores than would be indicated in the percentages reported in the Syracuse Study.

How do these university students compare by classes? From the table it will be seen that freshmen are again highest, most favorable toward God as indicated by a mean score of 7.79. Sophomores and juniors are nearly equal with a slightly higher score for the juniors, while the seniors have the lowest score for the group, 7.28. The freshman-senior difference of .51 with a *PE* of only .09 is statistically significant. The measure of dispersion shows a gradual increase in the scatter of scores as one studies the four classes from freshmen with 1.35 to seniors with 1.62.

Small institutional differences are seen in Table 20. State University *B*, which is located in the South, has the highest mean score, indicating most favorable attitudes toward the reality of God. Although the other three universities are located in the Midwest, Universities *C* and *D* show a difference of .35.

The data from these state university students seem to warrant the following conclusions:

1. Contrary to the reports from other studies, the attitudes of the university students here are definitely favorable toward God as shown in the mean score of 7.20. Approximately 75 per cent of these students scored above 7.0, indicating a belief in God. Only

TABLE 20

DIFFERENCE AMONG STATE UNIVERSITIES AS TO ATTITUDES TOWARD THE REALITY OF GOD

College Scale	*A* No.	*A* Pct.	*B* No.	*B* Pct.	*C* No.	*C* Pct.	*D* No.	*D* Pct.	Total No.	Total Pct.
10-10.9	2	0.7	1	1.0	5	0.9			8	0.8
9- 9.9	29	9.5	11	10.7	55	10.0	4	7.4	99	9.8
8- 8.9	104	34.1	52	50.5	192	34.8	16	29.6	365	35.9
7- 7.9	82	26.9	25	24.2	171	31.0	17	31.5	295	29.1
6- 6.9	48	15.7	9	8.7	66	12.0	9	16.7	132	13.0
5- 5.9	11	3.6	1	1.0	24	4.4	2	3.7	38	3.8
4- 4.9	14	4.6	2	1.9	25	4.5	2	3.7	43	4.2
3- 3.9	10	3.3	1	1.0	10	1.8	3	5.6	24	2.4
2- 2.9	2	0.6			1	0.2	1	1.8	4	0.4
1- 1.9	3	1.0	1	1.0	2	0.4			6	0.6
0- 0.9										
Total	305	100.0	103	100.0	551	100.0	54	100.0	1,013	100.0
Mean	7.46		7.98		7.63		7.28		7.60	
$SD_{dis.}$	1.59		1.26		1.41		1.59		1.47	

seven per cent of the 1,013 students scored below 5.0 in the area which can be described as atheistic.

2. Freshmen are most favorable toward the reality of God and seniors least so. The freshman-senior difference is statistically significant.

3. Of the four state universities studied, the one in the South shows attitudes most favorable toward the reality of God.

LUTHERAN COLLEGES

The mean score for these 1,168 students is 8.04, as seen in Table 21. Only three per cent of these students at Lutheran colleges have scores below 5.0 on the scale, indicating an atheistic attitude. On the other hand, almost 87 per cent of the group have mean scores above 7.0, indicating a belief in God. Approximately 10 per cent of these students are in the "wavering" area or in the interval "slightly favorable" toward a belief in God. Not only do we find the mean for the group decidedly favorable toward a belief in God, but the small class differences which exist favor the upper classes. Instead of the "alarming loss of faith" indicated in some studies, we find in this group a slight increase in mean scores from freshman to senior. The freshman is 7.99 compared with the junior score of 8.24 and the seniors, 8.09. The freshman-

TABLE 21

STUDENT ATTITUDES TOWARD THE REALITY OF GOD IN LUTHERAN COLLEGES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	10	1.6	1	0.5	5	3.7	1	0.5	17	1.5
9- 9.9	97	15.3	36	19.6	20	14.6	27	12.6	180	15.4
8- 8.9	271	42.8	78	42.4	74	54.0	99	46.3	522	44.7
7- 7.9	161	25.4	40	21.7	23	16.8	70	32.7	294	25.2
6- 6.9	54	8.6	15	8.2	7	5.1	11	5.1	87	7.4
5- 5.9	16	2.5	8	4.4	4	2.9	2	0.9	30	2.5
4- 4.9	12	1.9	2	1.1	3	2.2	3	1.4	20	1.7
3- 3.9	4	0.6	1	0.5	1	0.7			6	0.5
2- 2.9	3	0.5					1	0.5	4	0.3
1- 1.9	5	0.8	3	1.6					8	0.8
0- 0.9										
Total	633	100.0	184	100.0	137	100.0	214	100.0	1,168	100.0
Mean*	7.99		8.01		8.24		8.09		8.04	
$SD_{dis.}$	1.34		1.42		1.18		.99		1.28	

*Freshman-senior difference .10, *PE* .06.

senior difference is small, .10, *PE* .06, hence not significant. The interesting fact is the direction of the difference—what little difference does exist is positive—more favorable attitudes for the seniors.

Equally interesting is the difference in dispersion between the four classes. In the scales considered thus far, the freshmen have generally proven to be more homogeneous in their attitudes than seniors. In their attitudes toward God as measured on this scale, seniors show less dispersion of scores than do the freshmen. The greatest standard deviation, 1.42, is in the sophomore class and the smallest, .99, is found in the senior class.

The institutional differences shown in Table 22 are not outstanding except for the fact that College *G*, located in the South, is again in the lead with a mean of 8.28. The institutions as a group hover rather closely to the mean score of 8.04, which is characterized by such statements on the scale as: *"I am quite convinced of the reality of God"; "I trust in God to support the right and condemn the wrong."*

The findings in this attitude area in the Lutheran colleges indicate the following conclusions:

1. Students at these Lutheran colleges show a mean score, 8.04, more than two intervals above the mid-point of the scale, which indicates attitudes definitely favoring a belief in the reality of God.

TABLE 22

DIFFERENCES AMONG LUTHERAN COLLEGES IN ATTITUDES TOWARD THE REALITY OF GOD

College	*E*		*F*		*G*		*H*		*I*		*J*	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	1	0.5	2	0.9	4	2.3	5	2.1	1	1.2	4	1.5
9- 9.9	23	11.9	40	18.9	40	22.6	42	17.3	8	9.8	27	10.3
8- 8.9	90	47.7	96	45.3	86	48.6	113	46.5	29	35.4	108	41.4
7- 7.9	48	24.9	50	23.6	31	17.5	54	22.2	23	28.1	88	33.7
6- 6.9	11	5.7	12	5.7	7	3.9	19	7.8	13	15.9	25	9.6
5- 5.9	11	5.7	7	3.3	2	1.1	3	1.2	2	2.4	5	1.9
4- 4.9	7	3.6	3	1.4	4	2.3	2	0.8	1	1.2	3	1.2
3- 3.9							4	1.7	2	2.4		
2- 2.9	1	0.5			2	1.1			1	1.2		
1- 1.9	1	0.5	2	0.9	1	0.6	1	0.4	2	2.4	1	0.4
0- 0.9												
Total	193	100.0	212	100.0	177	100.0	243	100.0	82	100.0	261	100.0
Mean	7.88		8.14		8.28		8.15		7.54		7.98	
$SD_{dis.}$	1.33		1.24		1.32		1.23		1.67		1.07	

Only three per cent of these students can be considered in the atheistic part of the scale, while approximately 94 per cent of these students are above the mid-point.

2. Seniors show higher mean scores and less dispersion of scores than do freshmen, which is contrary to the direction of differences usually found in this and in other studies.

3. College *G*, located in the South, has the highest mean score, again indicating a geographic factor.

FRIENDS COLLEGES

In this group of three colleges we find a mean score of 7.99, practically the same as the score in the Lutheran colleges. The dispersion is slightly greater among these students. That these students are favorable in their attitudes toward God may also be seen from the fact (Table 23) that 92 per cent of these students are above 6.0 on the scale, above the neutral area.

The class differences are small but regular in the decreasing amount of scores from freshman to senior, and in the fairly regular increase in the amount of dispersion.

The institutional differences seen in Table 24 indicate that College *M* is again highest, while the greatest difference is between *K* and *L*. The dispersion is again smallest in the case of the highest score and greatest at College *L* which had the lowest mean score.

TABLE 23

ATTITUDES TOWARD THE REALITY OF GOD IN FRIENDS COLLEGES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	3	1.6	1	1.2			1	1.8	5	1.3
9- 9.9	32	17.0	12	14.8	15	25.9	8	14.3	67	17.5
8- 8.9	83	44.2	40	49.4	18	31.0	23	41.0	164	42.8
7- 7.9	42	22.3	14	17.3	13	22.4	14	25.0	83	21.7
6- 6.9	16	8.5	8	9.9	5	8.6	5	8.9	34	8.9
5- 5.9	2	1.1	2	2.5	4	6.9	1	1.8	9	2.3
4- 4.9	8	4.3	3	3.7	2	3.5	2	3.6	15	3.9
3- 3.9	1	0.5	1	1.2	1	1.7			3	0.8
2- 2.9	1	0.5					2	4.6	3	0.8
1- 1.9										
0- 0.9										
Total	188	100.0	81	100.0	58	100.0	56	100.0	383	100.0
Mean*	8.05		8.02		7.93		7.84		7.99	
$SD_{dts.}$	1.30		1.29		1.45		1.55		1.36	

*Freshman-senior difference .21, *PE* .15.

TABLE 24

DIFFERENCES AMONG FRIENDS COLLEGES IN STUDENT ATTITUDES TOWARD THE REALITY OF GOD

College	*K*		*L*		*M*		Total	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	2	1.0	1	0.8	2	2.7	5	1.3
9- 9.9	43	22.4	16	13.6	8	11.0	67	17.5
8- 8.9	77	40.1	48	40.7	39	53.4	164	42.8
7- 7.9	44	22.9	22	18.6	17	23.3	83	21.7
6- 6.9	14	7.3	16	13.6	4	5.5	34	8.9
5- 5.9	4	2.1	5	4.2			9	2.3
4- 4.9	3	1.6	9	7.6	3	4.1	15	3.9
3- 3.9	3	1.6					3	0.8
2- 2.9	2	1.0	1	0.9			3	0.8
1- 1.9								
0- 0.9								
Total	192	100.0	118	100.0	7	100.0	383	100.0
Mean	8.10		7.71		8.16		7.99	
$SD_{dts.}$	1.35		1.48		1.10		1.36	

METHODIST UNIVERSITY

For this and the other denominational colleges we turn to the composite Table 25. From the data presented for the Methodist university it will be seen that the 434 students tested show a mean

TABLE 25

SUMMARY OF DATA CONCERNING ATTITUDES TOWARD THE REALITY OF GOD BY CLASSES AND BY INSTITUTIONS

Institution	Freshman		Sophomore		Junior		Senior		Totals		Fresh-Sr.	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*Diff.*	*PE**
State Uni.	7.79	1.35	7.44	1.48	7.50	1.55	7.28	1.62	7.60	1.47	.51	.09
Lutheran	7.99	1.34	8.01	1.42	8.24	1.18	8.09	.99	8.04	1.28	.10	.06
Friends	8.05	1.30	8.02	1.29	7.93	1.45	7.84	1.55	7.99	1.36	.21	.15
Methodist	7.98	1.20	7.80	1.27	7.72	1.38	7.76	1.07	7.89	1.23	.22	.11
Presbyterian	7.99	1.23	7.88	.70	8.58	.64	7.77	.96	8.01	1.19	*	
Adventist	8.58	1.05					8.57	1.06	8.58	1.05	*	
U. Brethren	7.99	1.37	8.03	1.36	7.71	1.52	7.30	2.07	7.93	1.44	*	
Catholic	8.77	1.00	8.96	.64	8.45	1.07	8.69	.63	8.74	.91	*	

**PE* not shown for institutions reporting on less than 5 subjects in either freshman or senior classes.

score of 7.89. This is almost two intervals above the mid-point of the scale. Almost 94 per cent of these students are in the intervals above the neutral or agnostic area, 5 to 5.9.

The class differences are small but fairly regular with freshmen showing the highest mean score, 7.98 and the seniors smallest, 7.76. The measure of dispersion is smallest for the seniors, 1.07, and greatest for the juniors, 1.38.

Presbyterian College

The mean here is practically the same as that of the Friends colleges and of the Lutheran colleges. This score, 8.01, is based on a rather close clustering of scores as seen by the standard deviation of 1.19. More than 96 per cent of these 232 students fall in the intervals above 6.0 on the scale. Although the number of subjects in the upper classes is far too small for dependable conclusions, it is interesting to note that the mean for the junior class is more than half an interval higher than the mean for the freshman class.

Adventist College

Most of the church-affiliated colleges have shown mean scores clustering rather closely about the point, 8.0, on the scale. Here, however, we note the Adventist college with a mean score of 8.58, a full half interval higher than the other institutions so far studied. Table 25 also shows a closer clustering of scores for this college as seen in the smaller standard deviation of 1.05.

United Brethren College

The mean score for the students at this college is 7.93. Slightly more than 92 per cent of these students have mean scores of 6.0 or more. According to Table 25, the mean for the freshman class, 7.99, is .69 higher than the senior mean. On the other hand, the highest mean score is found in the sophomore year. Class differences in dispersion of scores are regular, least dispersion among freshmen and the greatest dispersion among the seniors.

Catholic College

The 97 students at this Catholic college (all women) show a mean score of 8.74, indicating strong religious attitude toward God as a reality. Approximately 98 per cent of these students scored

above 6.0 on the scale. Only two persons scored below 6.0, those two are in the interval 4-4.9, indicating disbelief in God. These girls cluster closely about their high mean as indicated by a standard deviation of only .91.

In spite of the small number of students in the classes, it is of interest to note that the highest score is not this time in the freshman class but in the sophomore group, which is the highest mean score not only for this Catholic school, but for the 18 institutions studied in this area. Be it remembered, however, the scores for this college on attitudes toward the church were still higher by slightly more than an entire interval (cf., p. 365). The senior mean for this group is 8.69, only .08 less than the mean for freshmen.

Sex Differences

We have seen that women are more favorable than men toward Sunday observance and also in their attitudes toward the church. From Table 26, it is evident that women are also more favorable in their attitudes toward God as a reality. The mean score for the 1,993 women is 8.04 compared with 7.81 for the 1,656 men. Although this difference of .23 is comparatively small, it is more than seven times greater than the probable error and may be considered statistically significant. The women as a group again are more homogeneous, as indicated by the standard deviation of 1.23 for women compared with 1.46 for men.

As we study the four classes we find higher mean scores for women than for men in each class with the exception of the junior class in which case the mean for men is .07 higher than for women. The greatest sex difference in attitudes for this area is found in the sophomore year where the mean score for women is .47 above the men. The smallest difference is in the junior year in which men lead. Without exception, the smallest measure of dispersion is found among women in every class and for the group as a whole.

The mean for women in both the freshman and senior classes are higher than those for men. The freshman-senior difference, however, is greater in the case of women. If we may be permitted to speak of a decrease of score, the decrease exists for both sexes as we look at the upper classes, but it is greater for women than it is for men. The freshman-senior difference for men is only .13, *PE* .05, while for women we have a freshman-senior difference of .31, *PE*

TABLE 26

SEX DIFFERENCES IN ATTITUDES TOWARD THE REALITY OF GOD

Scale	Freshman		Sophomore		Junior		Senior		Total		
	M.	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	Total
10.10.9	15	13		4	7		2	3	24	20	44
9- 9.9	132	195	27	62	37	33	26	35	222	325	547
8- 8.9	379	493	94	135	90	97	96	117	659	842	1,501
7- 7.9	248	290	47	89	39	76	88	89	422	544	966
6- 6.9	102	76	27	32	20	23	18	27	167	158	325
5- 5.9	28	15	18	7	11	6	5	9	62	37	99
4- 4.9	22	19	11	6	10	5	10	11	53	41	94
3- 3.9	15	3	6	3	3	6	4	2	28	14	42
2- 2.9	5	1	1		1	1	3		10	2	12
1- 1.9	6	6	1	2	1		1	2	9	10	19
0- 0.9											
Total	952	1,111	232	340	219	247	253	295	1,656	1,993	3,649
Mean*	7.86	8.14	7.57	8.04	7.91	7.84	7.73	7.83	7.81	8.04	7.93
$SD_{dis.}$	1.42	1.18	1.55	1.28	1.55	1.29	1.42	1.31	1.46	1.23	1.35

*Sex difference for entire group .23, *PE* .03.
Freshman-senior difference, Male 13, *PE* .05.
Freshman-senior difference, Female 31, *PE* .06.

.06. The freshman-senior difference for men is not significant, while for women this difference is greater than necessary for statistical significance.

Incidentally, we may recall that the studies cited, which report sex differences in religious beliefs, agree as to the more favorable attitudes on the part of women.

We may conclude that the following differences obtain between men and women:

1. Women are more favorable toward a belief in the reality of God than are men. The difference is small, but statistically significant.

2. The higher mean scores for women obtain in all classes with the one exception of the junior class in which case the scores for men are slightly higher. The greatest sex difference is found in the sophomore class.

3. The measure of dispersion of scores is smaller for women than for men for the entire group and for each one of the classes without exception.

4. The freshman-senior difference in scores among women is significant, while among men it is not significant.

Summary of Data from Eighteen Institutions

We turn now not alone to a summary of the data presented but

TABLE 27

Summary of Student Attitudes Toward the Reality of God

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	28	1.3	4	0.7	7	1.5	5	0.9	44	1.2
9- 9.9	327	15.8	89	15.6	70	15.0	61	11.1	547	15.0
8- 8.9	872	42.3	229	40.0	187	40.1	213	38.9	1,501	41.1
7- 7.9	538	26.1	136	23.7	115	24.7	177	32.3	966	26.5
6- 6.9	178	8.6	59	10.3	43	9.2	45	8.2	325	8.9
5- 5.9	43	2.1	25	4.4	17	3.7	14	2.6	99	2.7
4- 4.9	41	2.0	17	3.0	15	3.2	21	3.8	94	2.6
3- 3.9	18	0.9	9	1.6	9	2.0	6	1.1	42	1.2
2- 2.9	6	0.3	1	0.2	2	0.4	3	0.6	12	0.3
1- 1.9	12	0.6	3	0.5	1	0.2	3	0.5	19	0.5
0- 0.9										
Total	2,063	100.0	572	100.0	466	100.0	548	100.0	3,649	100.0
Mean*	8.01		7.85		7.87		7.79		7.93	
$SD_{dis.}$	1.30		1.41		1.42		1.37		1.35	

*Freshman-senior difference .22, *PE* .04.

also to a consideration of data from the group of institutions taken together. Table 27 shows a summation of data for the 3,649 students measured in 18 colleges and universities. The mean for the 18 institutions, 7.93, is in the upper part of the scale interval which the authors of the test interpret as indicating "Belief in God" and is only .07 below the lowest part of the area 8.0-11.0 which is interpreted as "Strong religious attitude toward God." Obviously the group does not belong in the latter area, but a glance at the percentage column shows that slightly more than 57 per cent of the scores do fall in this strongly religious area. Approximately 84 per cent of the 3,649 students have scores above 7.0, indicating "Belief in God" or strong belief. This is a much higher percentage than was the case in the Syracuse study referred to (7). In that study only 21 per cent believed in a personal God, and when we added the group checking the "nature God" concept, we then have only 63 per cent of the 1,321 students checking that section. The 84 per cent in the "believing" intervals of this study may then be contrasted with the 63 per cent checking the two statements in the Syracuse study. In the Leuba study, 82 per cent of the women and 55 per cent of the men are reported believing in a personal God. From Table 27 we may note the scores in the lower end of the scale, 0 to 4.9, the area indicating atheism. The scores for 167 persons fall in these intervals, lower than 5.0. This fact is by no means to be ignored, yet when it is recalled that this group of 167 persons scoring in the atheistic area is out of a total of 3,649 students, in other words approximately 4.5 per cent, the proportions are certainly not so great as some writers have been led to believe.[3]

As we survey the mean scores for the four classes we also fail to find evidence of a great "decrease" in scores as intimated in some studies. In the Syracuse study, 25.8 per cent of the freshmen compared with only 14.7 per cent of the seniors indicated a belief in a personal creator. Edwards and colleagues (5) found 40 per cent of the seniors expressing belief in a personal God. In this study, we find no class mean below 7.79, indicating belief in God, which score is almost two intervals above the mid-point of the scale. The freshman class has the highest mean score, 8.01. The mean scores for sophomores and juniors are approximately equal, 7.85 and 7.87,

[3]Perhaps the atheistic 4.5 per cent have been more aggressive and have received more public notice proportionately than have the 95 per cent.

while for seniors the score is 7.79. Obviously, the freshman-senior difference is again in the direction of less favorable attitudes toward God as a reality among seniors, but the difference is only .22 *PE* .04, statistically significant. Yet so long as 83 per cent of these seniors do indicate belief in God, we cannot be justified in speaking of any wholesale decline in student religious attitudes. No "alarming" decline is evident so long as the attitudinal difference between freshmen and seniors is only one-fifth of one scale-point, and since not one of the four classes are within one and one-half points of the "neutral or agnostic" area of the scale. On the other hand, there are the 167 individuals who are in the atheistic area.

From our data concerning student attitudes toward the reality of God, the following conclusions seem tenable:

1. Attitudes of students at the four state universities are definitely favorable toward God as a reality. In contrast with reports of certain other studies, approximately 75 per cent of these students indicate a belief in God while only seven per cent of this group scored in the area which can be described as atheistic. Freshmen are most favorable toward God and seniors least so, which difference is small but statistically reliable.

2. A slight geographic difference is again seen with the state university in the South showing the attitudes most favorable toward God.

3. The 1,168 students at Lutheran colleges indicate rather strongly attitudes favoring a belief in God. Contrary to the usual findings both in this and in other studies, the seniors at these Lutheran colleges show higher mean attitude scores and less dispersion of scores than do freshmen. The amount of this difference is not significant, but the direction is of more than passing interest.

4. The Lutheran college in the South again has the highest attitude scores, indicating a geographic factor.

5. Friends colleges have practically the same mean scores as the Lutheran group but a slightly higher dispersion of scores. Freshmen are again higher than the other classes, and the seniors lowest.

6. Students at the Methodist, Presbyterian, and United Brethren institutions indicated belief in God, the mean scores being near 8.0—approximately the same as the Lutheran and Friends colleges.

7. Of the 18 institutions, the Catholic college showed the attitudes most favorable toward God as a reality, and the Adventist college was second only to the Catholic group.

8. The attitudes of women toward God as a reality is significantly more favorable than are the attitudes of men. Women are more homogeneous in these attitudes than men.

9. A significant difference obtains between freshmen women and senior women, while the freshman-senior difference among men is not significant.

10. A belief in God is indicated by 84 per cent of the entire group of students in the 18 institutions. On the other hand, 4.5 per cent of these students are in the area which may be described as atheistic and approximately 11 per cent in the neutral, agnostic, or slightly favorable area.

11. The freshman-senior difference for all institutions taken together is small, .22, but significant. The smallest dispersion of scores obtains in the freshman class.

Basic and fundamental as attitudes toward the reality of God is, the question arises as to whether this belief in the reality of God is accompanied by attitudes indicating that God has a real influence on life and conduct. To this question we direct our attention in the following chapter.

VI. STUDENT ATTITUDES TOWARD GOD AS AN INFLUENCE ON CONDUCT

Since it is conceivably possible for student attitudes toward God to remain mere objective opinions as to the existence of God, the questions as to the influence of these attitudes on conduct arise. To what extent do these attitudes embrace a conviction of God as a power and a force in personal conduct? Are the attitudes described in the preceding chapter deep-seated and personal enough to influence life and conduct? Do these students themselves feel that their belief in God affects their conduct?

It is with the hope of receiving some light on these questions that we include data based on a scale of attitudes toward God as an influence on conduct. This 22-statement scale by Thurstone and Chave is distinctly personal. With only one exception, each statement is arranged directly in the first person. Something of the nature of this scale may be ascertained by examining the lowest, middle, and highest statements from the scale itself. On the basis of the scores, inverted so as to make the high scores represent attitudes favorable toward God, we find the lowest scale value, .10, assigned to the statement, *"Only fools and hypocrites talk about God influencing them."* Near the mid-point of the scale we find this typical statement, *"The idea of God neither helps nor hinders my endeavor to live a decent life."* The highest score, 10.8, represents attitudes of the type indicated by this statement, *"I have completely surrendered my life to God."* Perhaps even more expressive is this statement, *"God is a tremendous reality and I adjust all my life to this fact."* Or we may cite the statement which is given third place in the scale, *"I feel the call of God in every human need."* It is evident that the statements favorable or unfavorable are designed to indicate influence on conduct. These data should, it would seem, penetrate close to the heart of the question of religious attitudes among students—the question of the effect on life and conduct. Certainly when these data are considered in the light of the attitudes found in the area of Sunday observance, attitudes toward the church, and attitudes toward God as a reality, the composite picture of religious attitudes of these students should be somewhat nearer reality. We proceed now to an inspection of the data indicating attitudes toward God as an influence on conduct—again beginning with the four state universities.

State Universities

We have already referred to a statement near the mid-point of the scale indicating that God neither helps nor hinders living a decent life. Table 28 shows that these state university students

TABLE 28

Student Attitudes Toward God (Influence on Conduct) in State Universities

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	16	3.4	5	3.0	6	3.6	9	5.4	36	3.7
9- 9.9	121	25.7	35	20.9	40	24.3	33	19.7	229	23.6
8- 8.9	120	25.5	29	17.3	31	18.8	26	15.6	206	21.2
7- 7.9	51	10.8	23	13.8	14	8.5	31	18.5	119	12.3
6- 6.9	77	16.4	29	17.4	28	17.0	23	13.8	157	16.2
5- 5.9	44	9.3	17	10.2	23	13.9	16	9.6	100	10.3
4- 4.9	13	2.8	5	3.0	8	4.9	7	4.2	33	3.4
3- 3.9	16	3.4	14	8.4	5	3.0	13	7.8	48	5.0
2- 2.9	9	1.9	10	6.0	7	4.2	7	4.2	33	3.4
1- 1.9	3	0.6			3	1.8	2	1.2	8	0.8
0- 0.9	1	0.2							1	0.1
Total	471	100.0	167	100.0	165	100.0	167	100.0	970	100.0
Mean*	7.65		7.08		7.25		7.17		7.40	
$SD_{dis.}$	1.92		2.19		2.19		2.22		2.08	

*Freshman-senior difference .48, *PE* .13.

have a mean score of 7.40, which is approximately two intervals above the mid-point of the scale. This area of the scale is interpreted as indicating "definite recognition of God affecting conduct." Perhaps the simplest method of presenting the significance of this score, 7.40, is by citing two statements from the scale, one slightly above and one slightly below this scale value. *"I believe that one has to be faithful to God in order to prosper in life and I act accordingly."* *"I love God but I am too selfish to love my neighbor as myself."* It is evident that a wider difference of attitudes exists among state university students in this area than the areas studied in the preceding chapters. The standard deviation here is 2.08, which is considerably greater than the 1.47 deviation in the area concerning the reality of God. The same number of numerical units are used in both scales, identical subjects are being used, hence our deviations should be comparable. Even if this were not the case, the greater dispersion of scores is quite evident from comparing the grouping

of frequencies in Table 28 with those of Table 19. Apparently these university students are less homogeneous in their attitudes concerning the area of conduct than in the area of the reality of God. Inspection of the percentage columns shows that when it comes to God as an influence on conduct, 23 per cent of these state university students fall below 6.0 on the scale indicating a neutral or agnostic nature, compared with 11 per cent below 6.0 on the scale concerning the reality of God. Approximately 61 per cent of the group scored above 7.0, indicating definite recognition of God as affecting conduct. According to the same table, a little over nine per cent of this group are in the area below 4.0, indicating definite denial

TABLE 29

A COMPARISON OF STATE UNIVERSITIES CONCERNING ATTITUDES TOWARD GOD (INFLUENCE ON CONDUCT)

College	*A*		*B*		*C*		*D*		Total	
Scale	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	5	1.8	10	9.9	21	3.9			36	3.7
9- 9.9	55	19.5	26	25.7	143	26.7	5	9.4	229	23.6
8- 8.9	60	21.4	30	29.7	103	19.3	13	24.5	206	21.2
7- 7.9	33	11.7	15	14.8	63	11.8	8	15.1	119	12.3
6- 6.9	50	17.8	12	11.9	82	15.3	13	24.5	157	16.2
5- 5.9	41	14.6	3	3.0	49	9.2	7	13.2	100	10.3
4- 4.9	11	3.9	2	2.0	18	3.4	2	3.8	33	3.4
3- 3.9	13	4.6	2	2.0	29	5.4	4	7.6	48	5.0
2- 2.9	10	3.6	1	1.0	21	3.9	1	1.9	33	3.4
1- 1.9	2	0.7			6	1.1			8	0.8
0- 0.9	1	0.4							1	0.1
Total	281	100.0	101	100.0	535	100.0	53	100.0	970	100.0
Mean	7.14		8.24		7.43		6.92		7.40	
SD_{dis}	2.05		1.63		2.16		1.75		2.08	

of God as influencing conduct and presenting a strong atheistic attitude. From the standpoint of the Christian worker, however, the most promising field would seem to be among students whose scores are in the area between 4.0 and 6.9. This includes disbelieving students whose attitudes are not strongly set as yet, it includes the neutral or agnostic group, and it includes those somewhat influenced by the idea of God. In these three intervals at the middle of the scale, we find practically 30 per cent of the university students—no insignificant group.

When we turn to class differences, we again find them small.

Freshmen have the highest mean score and the sophomores the lowest, 7.65 and 7.08 respectively. While seniors are slightly above the sophomores, 7.17, the freshman-senior difference, .48 *PE* .13, is in the direction of lower scores for seniors. Again the smallest dispersion of scores is found in the freshman class and the greatest in the senior group.

Institutional differences are not large except for University *B*, the southern institution, in which case the mean score is 8.24, an area on the scale interpreted by the authors of the test as "strongly religious." Table 29 also reveals that the same institution has the most homogeneous student group.

From the data in this rather personal sphere, we may conclude:

1. State university students as a group indicate attitudes giving definite recognition of God as a power influencing conduct.

2. The distribution of these scores shows that 23 per cent of these students are in the agnostic or neutral area while 61 per cent of the group indicate attitudes recognizing the power of God in personal conduct. Only nine per cent of the group registered definite denial of the influence of God. Approximately 30 per cent of the students were near the middle area or in intervals indicating wavering and possibly attitudes not yet well established. The dispersion here is greater than in the area concerning the reality of God.

3. Seniors are less favorable toward God as an influence on conduct than are freshmen, the difference, .48, being almost four times the probable error, .13.

4. A geographic difference is again in evidence, the university in the South having a mean score almost an entire interval above that of the other three universities and also having the smallest measure of dispersion.

Lutheran Colleges

In the preceding chapter we saw the high scores of this group in the area concerning the reality of God. In Table 30 we see that their mean scores in the area on conduct are still higher. The mean score for the 1157 students is 8.33. Only seven per cent of these students fall below the mid-point of the scale, compared with 93 per cent who are above and with 42 per cent who are in the two highest intervals. A few typical statements from the immediate area of the mean, 8.33, will make the picture more vivid: *"I never trust*

TABLE 30

STUDENT ATTITUDES TOWARD GOD (INFLUENCE ON CONDUCT), IN SIX LUTHERAN COLLEGES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	53	8.5	20	11.0	15	10.9	13	6.1	101	8.7
9- 9.9	223	35.7	52	28.7	47	34.1	65	30.5	387	33.5
8- 8.9	156	24.9	48	26.5	30	21.7	51	23.9	285	24.5
7- 7.9	81	13.0	7	14.9	20	14.5	25	11.7	153	13.2
6- 6.9	76	12.2	25	13.8	17	12.3	35	16.4	153	13.2
5- 5.9	15	2.4	4	2.2	4	2.9	10	4.7	33	2.9
4- 4.9	7	1.1	1	0.6	3	2.2	7	3.3	18	1.6
3- 3.9	6	1.0	3	1.7	1	0.7	5	2.4	15	1.3
2- 2.9	4	0.6	1	0.6	1	0.7	1	0.5	7	0.6
1- 1.9	3	0.5					1	0.5	4	0.4
0- 0.9	1	0.1							1	0.1
Total	625	100.0	181	100.0	138	100.0	213	100.0	1,157	100.0
Mean	8.40		8.38		8.41		8.03		8.33	
$SD_{dts.}$	1.58		1.52		1.57		1.74		1.61	

*Freshman-senior difference .37, *PE* .09.

anyone who denies that he believes in God." "My faith in God makes me struggle for a new world-order." Only four per cent of the group is below 5.0 on the scale, indicating disbelief. In the three middle intervals which may be considered neutral or wavering we find approximately 17 per cent of these students—again, no insignificant group.

The class differences in this area are somewhat unusual in that the three lower classes, freshman, sophomore, and junior have mean scores approximately equal. The mean score for the junior class is 8.41 while the seniors drop to 8.03. The freshman-senior difference of .37, PE .09, is significant. Not only are the seniors less strong in their attitude toward God as an influence on conduct, but their dispersion is greater than for any of the other classes.

In Table 31 we again note that the Southern, College *G*, has the highest mean score, 8.71, and also the smallest dispersion among its students, *SD* 1.28. The smallest mean is found in an institution east of Chicago.

For the six Lutheran colleges then, the following facts seem evident:

1. The mean for the Lutheran colleges, 8.33, is even higher

TABLE 31

DIFFERENCES AMONG LUTHERAN COLLEGES AS TO ATTITUDES TOWARD GOD (INFLUENCE ON CONDUCT)

College Scale	E		F		G		H		I		J	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
10-10.9	17	8.8	17	8.2	17	9.6	26	10.9	12	14.8	12	4.6
9- 9.9	66	34.4	74	35.7	69	3.9	81	33.9	17	21.0	80	30.7
8- 8.9	42	21.9	59	28.5	52	29.4	58	24.3	16	19.8	58	22.2
7- 7.9	27	14.0	22	10.6	24	13.6	27	11.3	14	17.3	39	14.9
6- 6.9	19	9.9	26	12.6	10	5.6	36	15.1	16	9.8	46	17.6
5- 5.9	8	4.2	4	1.9	2	1.1	4	1.7	2	2.5	13	5.0
4- 4.9	4	2.1	3	1.5	2	1.1	3	1.2	1	1.2	5	1.9
3- 3.9	5	2.6	2	1.0			3	1.2	1	1.2	4	1.5
2- 2.9	4	2.1					1	0.4	1	1.2	1	0.4
1- 1.9					1	0.6					3	1.2
0- 0.9									1	1.2		
Total	192	100.0	207	100.0	177	100.0	239	100.0	81	100.0	261	100.0
Mean	8.22		8.50		8.71		8.45		8.08		7.99	
$SD_{dis.}$	1.80		1.39		1.28		1.52		1.88		1.71	

than their score in the area dealing with attitudes toward the reality of God. Only four per cent of this group indicate definite attitudes of disbelief, while 93 per cent are above the mid-point of the scale and 42 per cent in the two highest intervals. Of educational significance is the fact that 17 per cent of these students are in the agnostic or wavering intervals of the scale.

2. The freshman-senior class difference is small but significant in the direction of the less religious attitude on the part of the seniors.

3. A geographic factor again seems present in that the college in the South has the strongest favorable attitude in this field among the Lutheran institutions and also has the smallest dispersion of scores.

FRIENDS COLLEGES

The mean for this group of 382 students is 8.13, again definitely in the area described as "strongly religious." Table 32 reveals that only a little more than four per cent of this group falls in the four lowest intervals indicating atheistic attitudes. On the other hand, we find 73 per cent of the group in the upper four intervals.

Class differences are small among these Friends colleges, but irregular in the direction of the differences. The freshman-junior difference is .53 in the direction of lower scores for the juniors. On

the other hand, the freshman-senior difference, .26, is too small to constitute a significant difference. The comparatively small number of subjects in both the junior and senior classes precludes definite conclusions. The class with the lowest score again has the greatest dispersion.

TABLE 32

ATTITUDES TOWARD GOD (INFLUENCE ON CONDUCT), AT FRIENDS COLLEGES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	22	11.8	4	4.9	6	10.4	4	7.1	36	9.4
9- 9.9	56	29.9	31	38.3	16	27.6	25	44.6	128	33.5
8- 8.9	39	20.9	17	21.0	7	12.1	11	19.7	74	19.4
7- 7.9	23	12.3	9	11.1	5	8.6	4	7.1	41	10.7
6- 6.9	30	16.0	11	13.6	13	22.4	7	12.5	61	16.0
5- 5.9	5	2.7	5	6.2	3	5.2	3	5.4	16	4.2
4- 4.9	4	2.1	2	2.5	2	3.4	1	1.8	9	2.4
3- 3.9	5	2.7	1	1.2	6	10.3			12	3.1
2- 2.9	1	0.5	1	1.2			1	1.8	3	0.8
1- 1.9										
0- 0.9	2	1.1							2	0.5
Total	187	100.0	81	100.0	58	100.0	56	100.0	382	100.0
Mean*	8.17		8.18		7.64		8.43		8.13	
$SD_{dts.}$	1.89		1.68		2.13		1.65		1.87	

*Freshman-senior difference .26, *PE* .18.

TABLE 33

COMPARISON OF FRIENDS COLLEGES CONCERNING ATTITUDES TOWARD GOD (INFLUENCE ON CONDUCT)

College / Scale	*K* No.	*K* Pct.	*L* No.	*L* Pct.	*M* No.	*M* Pct.	Total No.	Total Pct.
10-10.9	22	11.5	6	5.1	8	11.0	36	9.4
9- 9.9	83	43.2	24	20.5	21	28.8	128	33.5
8- 8.9	28	14.6	28	23.9	18	24.6	74	19.4
7- 7.9	12	6.3	19	16.3	10	13.7	41	10.7
6- 6.9	27	14.1	19	16.3	15	20.5	61	16.0
5- 5.9	7	3.6	8	6.8	1	1.4	16	4.2
4- 4.9	6	3.1	3	2.6			9	2.4
3- 3.9	6	3.1	6	5.1			12	3.1
2- 2.9	1	0.5	2	1.7			3	0.8
1- 1.9								
0- 0.9			2	1.7			2	0.5
Total	192	100.0	117	100.0	73	100.0	382	100.0
Mean	8.40		7.52		8.42		8.13	
$SD_{dts.}$	1.82		2.07		1.34		1.87	

Table 33 indicates institutional differences somewhat different from what has been observed among these colleges in the preceding chapters. College *M* has usually been higher in attitude scores than the other two institutions, while the latter have been rather close together in mean scores. In Table 33 we find College *M* and *K* with almost identical scores and College *L* almost an interval below the other two. College *M* again shows the lowest dispersion of scores.

Methodist University

Turning to the composite array of data in Table 34, the mean score for the Methodist university, 8.05, is seen to be higher than the mean for the state universities and lower than the mean for Lutheran and for Friends colleges. The mean for this institution is in the area of strong religious attitudes toward God and His influence on conduct. It is rather remarkable that out of the 433 students tested, not one student scored in either of the two lowest intervals while some individuals have been found in these most antagonistic intervals in the state universities, the Lutheran groups, and in the Friends groups. The dispersion of scores is practically as small as that of the Lutheran group.

The class differences in this university are somewhat irregular. The sophomore mean, 8.34, is highest, the freshman group is next with a score of 8.09, then the juniors with the lowest scores, 7.66, followed by a slight reversal on the part of seniors to 7.88. The sophomore-junior difference of .68 is significant whereas the freshman-senior difference of .21, *PE* .17 is not significant.

Presbyterian College

The mean for this institution of the Presbyterian Church is slightly above that of the Methodist university just considered. In this Presbyterian college, only one person is found in the three lowest intervals compared with 136 persons in the three highest intervals. In terms of percentage the contrast is even stronger—one-half of one per cent in the three lowest intervals contrasted with 60 per cent of the 225 students in the three highest intervals.

A study of the classes reveals the amazingly high score of 9.50 on the part of the juniors. Furthermore, both juniors and seniors

TABLE 34

ATTITUDE TOWARD GOD (INFLUENCE ON CONDUCT) BY CLASSES AND BY INSTITUTIONS

Institution	Freshman		Sophomore		Junior		Senior		Totals		Fresh-Senior	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*Diff.*	*PE**
State Uni.	7.65	1.92	7.08	2.19	7.25	2.19	7.17	2.22	7.40	2.08	.48	.13
Lutheran	8.40	1.58	8.38	1.52	8.41	1.57	8.03	1.74	8.33	1.61	.37	.09
Friends	8.17	1.89	8.18	1.68	7.64	2.13	8.43	1.65	8.13	1.87	.26	.18
Methodist	8.09	1.64	8.34	1.53	7.66	1.67	7.88	1.70	8.05	1.65	.21	.17
Presbyterian	8.05	1.81	8.00	1.71	9.50	1.26	8.68	1.53	8.14	1.80	*	
Adventist	9.19	1.16					9.57	1.10	9.22	1.16	*	
U. Brethren	8.59	1.37	8.00	1.84	8.42	1.77	7.60	1.76	8.40	1.57	*	
Catholic	9.28	.74	9.33	.90	9.20	.95	9.10	1.31	9.25	.94	*	

*Freshman-senior difference and *PE* not shown for institutions reporting on less than 50 subjects in the senior class.

are substantially higher than the freshmen and sophomores. We can only regret that the number of subjects in the upper classes is too small to be considered representative of the students in those classes.

Adventist College

This is the first institution of our group to have its mean enter the ninth interval of the scale. The mean score of these 163 students, 9.22, is equalled or surpassed by only one other institution among the 18 schools studied. Furthermore, the dispersion as measured by the standard deviation of the distribution is small, only 1.16. At this institution we find no person in the three lowest intervals! The high mean at this institution may be characterized by a statement from the test having approximately the scale value of this institutional mean: "*God is a hidden force directing my life as I strive for the best.*" Seniors are higher than freshmen, but again, we have not sufficient numbers in the senior class for definite conclusions.

United Brethren

The mean score for this institution, 8.40, indicates definite recognition of God as a force affecting conduct. Table 34 shows a standard deviation of 1.57 for the group of 153 students, which indicates homogeneity although not so great homogeneity as was the case in the Adventist college. Of these 153 students, one person scored within the lowest three intervals, while on the other hand 66 per cent of the group scored in the three highest intervals. The class differences are in the direction of lower scores for the upper classes.

Catholic College

The same table (Table 34) shows that this Catholic institution again has the highest mean score among the 18 institutions included in this study. However, the mean, 9.25, is only .03 higher than that of the Adventist college, hence the mean scores of the two institutions may be considered approximately equal. (Equivalent mean scores obviously does not mean identical attitudes toward God on the part of the two student groups. Nor does it mean *equivalent* attitudes on the part of the two groups except as the combination

of student responses and scale values result in equivalent mean scores for the institutions.) In this Catholic institution, we find not one person scoring below 6.0 on the scale. In other words, 100 per cent of this small group are above the mid-point of the scale. Only two persons are in the interval of 6-6.9, indicating attitudes only slightly affected by the idea of God as a force in conduct. In contrast is the fact that 74 per cent of these students are in the two highest intervals characterized by such statements as: *"I have completely surrendered my life to God." "I feel the call of God in every human need."* Except for the senior class, all of the standard deviations are less than 1.0. The class differences are small and not significant.

Sex Differences

We have found differences between men and women in their attitudes toward Sunday observance, toward the church, toward the reality of God. When we inspect Table 35 it is seen that sex differences in this area are twice as great as in the case of the attitudes toward the reality of God. The mean scores for the 1,618 men who took this test is 7.82 compared with a mean of 8.29 for the 1,961 women. Furthermore, this difference of .47 is three times as great as needed for statistical significance. Thus in attitudes concerning the influence of God on conduct, women seem to be more religious than men. The sex difference in the area of the reality of God was also significant but only half so great as in this case. As will be seen in the frequency columns, men invariably have more members falling into the intervals below 8.0 of the scale than women. On the other hand, women invariably have the larger numbers in the three intervals above this point. The standard deviation of the distribution for women is 1.70 compared with 1.95 for men.

As we turn to the four classes, we note that women have the higher mean scores in every class, and with only one exception, they have the lower standard deviations. The greater homogeneity among women students is also evident from a casual inspection of the distribution in the table.

Rather significant sex differences obtain in connection with freshman-senior differences. For males, the difference between the freshman and the senior class scores is .30, *PE* .10, which is not

TABLE 35

SEX DIFFERENCES IN ATTITUDES TOWARD GOD AS AN INFLUENCE ON CONDUCT

Scale	Freshman		Sophomore		Junior		Senior		Total		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
10-10.9	73	90	21	25	19	22	21	20	134	157	291
9- 9.9	265	417	47	115	49	81	60	93	421	706	1,127
8- 8.9	196	265	43	75	43	45	38	70	320	455	775
7- 7.9	124	131	40	39	28	27	44	33	236	230	466
6- 6.9	133	128	37	41	39	32	38	39	247	240	487
5- 5.9	67	30	18	16	22	15	18	16	125	77	202
4- 4.9	25	5	4	7	8	8	10	6	47	26	73
3- 3.9	25	18	9	10	7	5	10	10	51	43	94
2- 2.9	10	6	6	6	3	6	8	2	27	20	47
1- 1.9	4	2				3	1	2	5	7	12
0- 0.9	5								5		5
Total	927	1,092	225	334	218	244	248	291	1,618	1,961	3,579
Mean*	7.93	8.46	7.72	8.15	7.72	7.99	7.63	8.07	7.82	8.29	8.08
$SD_{dis.}$	1.92	1.52	1.94	1.81	1.90	2.04	2.07	1.82	1.95	1.70	1.83

*Sex difference for the entire group .47, *PE* .04.
Freshman-senior difference, male .30, *PE* .10.
Freshman-senior difference, female .39, *PE* .06.

statistically significant, while for women, the difference is significant, .39, *PE* .06. For both sexes, the senior mean is lower than for that of freshmen.

These differences between men and women lead to the following conclusions:

1. For these college and university students as a whole, sex differences not only exist, but the difference is twice as great in this area of conduct as in the case of attitudes toward the reality of God.
2. Not only as a group, but in each of the four classes without exception do women indicate more favorable attitudes recognizing God as a power in influencing their conduct.
3. The smaller measures of dispersion for women as a whole and in each class, with only one exception, indicate less variance in the attitudes among women than among men.
4. The freshman-senior difference among women is significant and is greater than the freshman-senior difference among men.

Summary Based on the Eighteen Colleges and Universities

We have seen something of the personal nature of the scale used to ascertain student attitudes toward God as an influence on conduct. Do students themselves believe they are affected by the influence of God? The answer from the 18 institutions is rather emphatic. To secure a composite view of student attitudes from all of the 18 institutions we now turn to Table 34 where institutional groups are listed and to Table 36 where data from all institutions are taken together.

The mean score for the 3,579 students, 8.08, indicates that these students themselves feel that their belief in God does influence their conduct. This mean, 8.08, is in the third interval from the top of the scale and was described as indicating definite recognition of God as affecting conduct. We may again be reminded of the significance of the mean by turning to the scale on which these 3,579 students checked the statements indicating their own attitudes. Slightly below the value of the mean for these students is the statement: *"I believe that one has to be faithful to God in order to prosper in life and I act accordingly."* One may question the motive back of this statement, but there can scarcely be any doubt that it reveals a belief in God as a force in life. It is interesting to note that the mean for these same people is 7.93 when their attitude toward the reality of God is measured, compared with 8.08 as the mean for attitudes

TABLE 36

ATTITUDES TOWARD GOD (INFLUENCE ON CONDUCT), IN EIGHTEEN COLLEGES AND UNIVERSITIES

Scale	Freshman No.	Freshman Pct.	Sophomore No.	Sophomore Pct.	Junior No.	Junior Pct.	Senior No.	Senior Pct.	Total No.	Total Pct.
10-10.9	163	8.1	46	8.2	41	8.9	41	7.6	291	8.1
9- 9.9	682	33.8	162	29.0	130	28.1	153	28.4	1,127	31.5
8- 8.9	461	22.8	118	21.1	88	19.0	108	20.0	775	21.7
7- 7.9	255	12.6	79	14.1	55	11.9	77	14.3	466	13.0
6- 6.9	261	12.9	78	14.0	71	15.4	77	14.3	487	13.6
5- 5.9	97	4.8	34	6.1	37	8.0	34	6.3	202	5.7
4- 4.9	30	1.5	11	2.0	16	3.5	16	3.0	73	2.1
3- 3.9	43	2.1	19	3.4	12	2.6	20	3.6	94	2.6
2- 2.9	16	0.8	12	2.1	9	1.9	10	1.9	47	1.3
1- 1.9	6	0.3			3	0.7	3	0.6	12	0.3
0- 0.9	5	0.3							5	0.1
Total	2,019	100.0	559	100.0	462	100.0	339	100.0	3,579	100.0
Mean*	8.21		7.97		7.86		7.86		8.08	
$SD_{dis.}$	1.74		1.86		1.98		1.95		1.83	

*Freshman-senior difference .35, *PE* .06.
Freshman-sophomore difference .24, *PE* .06.

toward God as an influence on conduct. Contrary to expectations, dispersion as measured by the standard deviation is greater in this area, 1.83, compared with 1.35 in the area concerned with the reality of God.

Inspection of the percentage columns is fully as revealing as the mean scores. Note for instance, only six per cent, 231 persons, of these 3,579 students fall in the lowest five intervals of the scale indicating disbelief and atheism. On the other hand 61 per cent of this entire group scored in the three highest intervals of the scale. In the interval indicating favorable attitudes and mildly favorable attitudes we find 13 per cent, or 466 persons. Almost 20 per cent of this group, 680 persons, are in the two intervals, 5.0 to 6.9, which may be described as agnostic or only slightly affected by an idea of God. Again it would seem that this 20 per cent of the students in the wavering, agnostic area would constitute the most promising field for Christian workers.

In the four classes through all the institutions, we find the highest mean score in the freshman class, 8.21. The sophomore score is .24 lower, while oddly enough the mean score for juniors and seniors are identical for the entire group when calculations are

carried to only two places, 7.86. For all of the institutions together, we may conclude that freshmen are most favorable in their attitudes toward God as an influence on conduct, sophomores less so, and juniors and seniors "tieing" for third place. The high freshman mean score is accompanied by the lowest standard deviation.

The freshman-senior difference for the 18 colleges and universities, .35, *PE* .06, is statistically significant, and it follows the direction of all of the areas studied in that the lower scores are found among seniors. Since the greatest part of this freshman-senior difference is really accounted for by the freshman-sophomore difference, we may point out that this latter difference, .24, *PE* .06, is also statistically significant.

The following conclusions concerning attitudes toward God as an influence on conduct seem justified by the data presented:

1. The attitudes of only six per cent of these 3,579 students can properly be designated as atheistic or disbelieving, while 61 per cent of these students indicate strongly religious attitudes toward God as an influence on conduct.

2. This group as a whole seems slightly more favorable toward God as an influence on conduct than on the question of the reality of God.

3. For the group as a whole, freshmen are most favorable toward God, with less favorable attitudes on the part of sophomores and still less on the part of juniors and seniors. The freshman-senior difference of .35 in the direction of lower scores for seniors is statistically significant for the entire group.

4. Seniors are slightly higher than freshmen at Friends, Presbyterian, and Adventist colleges. On the other hand, seniors are lower than freshmen in all the other colleges, the difference being significant in the case of state universities (99 chances out of 100), and statistically significant in the case of the six Lutheran colleges.

5. The same state university students whose mean score was 7.60 on the "Reality of God" test were slightly lower on the "conduct" scale, 7.40—a difference of .20. On the other hand, 13 out of the 14 church-affiliated colleges showed a difference in the opposite direction—the higher mean scores were in the realm of "conduct." The one state university in the South also showed the higher mean score on the scale measuring "influence on conduct."

6. A sectional influence seems present, the two institutions located

in the South, a Lutheran college and a state university, both have mean scores substantially higher than the other institutions of the same type.

7. In state universities, 23 per cent of the students are in the neutral or agnostic area while 61 per cent of the group indicate recognition of the power of God in their personal conduct. Only 12 per cent of these university students registered definite denial of the influence of God on conduct.

8. Among the six Lutheran colleges, the mean, 8.33, indicates strongly religious attitudes. Only four per cent of this group indicate disbelief while 42 per cent of these students are in the two highest intervals of the scale.

9. The mean of students at the three Friends colleges indicates favorable attitudes toward the influence of God on conduct. Only six per cent of this group fall in the area of disbelief and atheism, while 44 per cent are in the two upper intervals of the scale.

10. Of the 433 students tested at the Methodist university, not one person scored in the two lowest intervals of the scale. The mean for this group of 433 students is 8.05.

11. The mean score for the Presbyterian college, 8.14, is quite similar to the attitudes at the Methodist institution, definitely favorable toward God as an influence on conduct. The Presbyterian juniors showed strongly religious attitudes as indicated by a mean of 9.50.

12. The College of the United Brethren shows definitely religious attitudes in this area as seen by the mean of 8.40. No persons scored in the three lowest intervals, while 66 per cent of the group scored in the three highest intervals of the scale.

13. The Adventist and Catholic institutions show almost equally strong religious attitudes—both of them decidedly higher than the score found in any of the other institutions included in this study. The mean for the Adventist college would be the highest score in this group of institutions if we allow for the sex factor in the case of the Catholic institution where only girls were tested. However, these two institutions rank highest in this area among the 18 institutions. The dispersion of scores is smallest for the Catholic college.

14. Sex differences in this area are even greater than in the area on the "reality of God." For the group as a whole and for each one of the four classes without exception, women indicate stronger

attitudes toward God as an influence on conduct than do men. There is less variance among women than among men in their attitudes in this area. The freshman-senior difference among women is statistically significant—among men it is not significant. For both sexes, however, the difference is toward smaller scores for seniors.

15. With due recognition to institutional, class, sex, and individual differences as well as some exceptions which have been noted, we may conclude that for this group of students as a whole these data indicate a definite recognition of God as influencing conduct.

VII. FACTORS RELATED TO STUDENT RELIGIOUS ATTITUDES

Thus far we have confined our attention to the strictly religious attitudes of the 3,756 students in these 18 colleges and universities. The four phases of religious attitudes, attitudes toward Sunday Observance, attitudes toward the Church, toward God as a Reality, and toward God as an Influence on Conduct have each been considered from the standpoint of types of institution, individual institutions, the year of student in college, and the sex of the student. Before summarizing our conclusions we shall briefly consider certain other factors which are related to the religious attitudes of these same students. We turn first to the question as to how these same students would fare on a test of conservatism-radicalism in social, political, and economic fields.

Conservatism-Radicalism

The question as to how radical American college and university students really are is one which has caused no little concern in recent years (15). Judging from popular press reports of recent years, American college students are not simply liberal in their views, but they are often described as red, radical, bereft of personal ideals, and all but ready to abolish the social and economic order. Such reports have reached the ears of lawmakers who have not been slow to call forth the educational leaders of youth and insist that they "swear allegiance," submit to investigations, "that we might save the youth of the land."

These reports are subject to at least two criticisms: First, they fail to define terms—hence radicalism has often meant a view contrary to that of the writer. Second, the evidence for the allegations have often been pitifully meager—frequently based on reports of a few escapades or upon the direct questioning of a small group of students.

The scientific studies which have been made have frequently suffered from one or more of the following handicaps: (*a*) Use of the simple questionnaire method with the attendant difficulties in the way of adequate statistical treatment; (*b*) study of one or two specific issues as is often done in newspaper polls, the data from which does not warrant conclusions as to general "radical" or "con-

servative" attitudes; (*c*) the comparatively small number of students on which some of these studies are based.

In the present study, conservative attitudes are defined as those which tend to retain status-quo on a larger number of issues. Liberal attitudes are those which would welcome moderate changes. The terms radical and reactionary are at the extremes of this continuum.

This part of our study is based on the response of the same 3,758 students and the same colleges and universities which have been considered throughout this volume. For this phase of the investigation, we have chosen the Lentz (11) *C-R Opinionaire, Form K*, reliability .83, on a retest, .94. This 60-item scale consists of issues in such fields as free trade, science and religion, race toleration, capitalism, communism, and others. Theoretically, the most reactionary individual could secure a score of 60 on this scale and the most violent radical a score of zero. (Neither extreme was reached by any student.) Scores above the mid-point of the scale, 30, may be interpreted as on the conservative side and scores below 30 as on the liberal side of this continuum.

The data from this study indicate that the fear of "radicalism running rampant" among college and university students is something like the report of Mark Twain's death, "slightly exaggerated." In the four state universities, the 1,032 students as a group are on the conservative side of the scale. Freshmen are most conservative among the four classes, seniors least conservative. The freshman-senior difference is 16 times greater than the probable error, four times greater than necessary for statistical significance. It will be recalled that freshmen were also the most religious students in these universities. The four state universities, as a group and individually, are definitely on the conservative side of the scale, mean scores ranging from 31.39 to 35.21, both above the mid-point of the scale. The mean score for the four state universities is 32.88.

Even greater conservatism is found among the 1,182 students at the six Lutheran colleges. The mean for this group is 35.00, five points above the mid-point of the scale and more than two points above students at the state universities. Although freshmen here are also more conservative than the seniors, the freshman-senior difference is only half as great as at the state universities. The freshman-senior difference is accounted for chiefly by differences occuring at the end of the junior college period—between sophomore and junior

classes. As to geographic differences, the greatest conservatism was found in the South, the least in the Midwest, with colleges east of Chicago in position between the other two groups. The one Lutheran college having the more conservative freshmen has still more conservative seniors and the one selecting the least conservative students has still less conserative seniors.

In the three colleges of the Society of Friends, a total of 387 students indicated attitudes less conservative than most of the other groups. To anyone unacquainted with the Society of Friends, this may seem surprising. However, let it be recalled that the Friends as a group are unalterably opposed to war, are opposed to giving oaths in court, and on the positive side are intensely active in promoting peace movements and social service. Since war, racial discrimination, nationalism, and certain economic and social practices are part of our "status quo," it is not difficult to see why the mean scores at Friends colleges might be low on a composite scale. The mean for the group, however, is 30.09, almost exactly at the midpoint or the neutral part of the scale. Again freshmen are more conservative than seniors. All of the other institutions studied, Methodist, Presbyterian, Adventist, United Brethren, and Catholic leaned definitely toward the conservative end of the scale.

The conservative-radical attitudes of these students may be summarized as follows:

1. Freshmen as a whole and in every institution, with one exception, have mean scores more conservative than have the seniors. For the entire group, the freshman-senior difference is greater than necessary for statistical significance.

2. Generally speaking, the greatest homogeneity as measured by the standard deviation of scores is found among freshmen and least among seniors.

3. In the case of one institution we find strongly conservative freshmen and even more conservative seniors.

4. Sex differences in conservatism not only exist, but they are found in each of the four years of college. The differences are significant and invariably in the direction of greater conservatism among women.

5. Institutional differences also obtain on this continuum, not only in total mean scores, but also in the amount of freshman-senior differences which range from 8.08, the mean difference for the state

universities to 2.19, the freshman-senior difference at the Catholic college.

6. In this group of 18 colleges and universities we find not the radicalism often attributed to the college student, but attitudes which are definitely on the side of conservatism. Only 22 individuals out of 3,785 showed mean scores in the lowest 10-point area of the scale which might be termed "radical."

7. In general, the class, the sex, or the institution having the strongest religious attitudes are also the more conservative. Freshmen show stronger religious attitudes and more conservatism than do seniors. Women are more religious and conservative than are men. The most conservative and most religious group is found at a Catholic College.

Attitudes Toward the College Now Attended

Do these students favor the type of institution which they are now attending? If they had children to send to college, distance and expense being equal, would they choose the same type of institution they are now attending (17)? Are seniors stronger in their approval of the college attended than freshmen who have just been enrolled? Are co-eds more likely to approve of the type of college attended than college men? Do the more religious and conservative groups differ from others in institutional approval?

The responses from these students to the question of institutional approval may be briefly summarized as follows:

1. The freshman-senior differences as to institutional approval are small and not statistically significant. However, such differences as do exist generally favor the seniors rather than the freshmen.

2. For the entire group of 3,453 students responding to this item, there is general approval of the type of institution now attended. This approval may be indicated by the fact that 72 per cent of the group registered either approval or strong approval of the institution attended. Only nine per cent show disapproval and 19 per cent are undecided.

3. For the group as a whole, women show stronger institutional approval than do the men. Although this difference is small, it is statistically significant (17). The mean score for institutional approval is higher for women in each one of the four classes with the exception of the junior class. The freshman-senior differences

are greater among males than among females, senior scores being higher in both cases. In every class, women are more homogeneous as measured by the standard deviation than are men.

4. Strongest institutional approval is shown at the Adventist and Catholic institutions. Although lower than at the denominational colleges, the score at the state universities also indicates definite approval.

5. The institutions whose students have been found to be most religious and most conservative are also strongest in student approval of the institution attended. The relation between these attitudes is again seen in the case of sex differences. Women who were seen to be more religious and conservative than men are now found to be significantly higher in their score of institutional approval than men.

Something of the complexity of religious attitudes was indicated in the introductory chapter. We have noted some of the intricate issues involved in the four chapters on definitely religious attitudes. We have now noted relationships between religious attitudes and conservatism-radicalism and we have even had indications of a relationship between religion and college or university approval. We turn now to consider possible relationships between student attitudes and such factors as campus activities, *NYA* work, and the vocation of the student's father.

Campus Activities and Student Attitudes

Are students engaged in campus religious organizations actually more religious than their fellow students? Are fraternity men more conservative as a group than their "non-frat brethren?" Are non-activity students more conservative or more religious than students engaged in campus activities?

Instead of considering our data by college classes as heretofore, we shall give attention to six major student activity groups: athletics, music, religious, fraternity, sorority, and non-activity groups. The religious activity group includes students active in the Campus *YMCA, YWCA,* Mission societies, Life-Service groups, and others. The non-activity group comprises the relatively large number of students active in no major campus activity.

This study indicates a relationship between campus-activities and students attitudes in each one of the six attitude areas considered.

This relationship between activities in college and student attitudes may be summarized as follows:

1. In the religious areas, the extra-class activity differences are from two to four times greater than the freshman-senior differences among the same students. When we consider attitude toward the college now attended, the activity differences are nine times greater than the freshman-senior differences.

2. The differences between the attitude scores of fraternity and sorority groups are greater than can be accounted for on the basis of sex alone.

3. From the most conservative group to the least conservative, we may rank these activity groups as follows: musical, non-activity, religious, athletic, sorority, fraternity.

4. From greatest to least institutional approval these activity groups may be ranked as follows: religious, sorority, musical, fraternity, athletic, non-activity.

5. For three of the religious scales, measuring attitudes toward the church, toward God as a reality, and toward God as an influence on conduct, these activity groups may be ranked from most to least religious: religious activity, musical, sorority, non-activity, athletics, fraternity.

6. Considering the six attitude measures together, the more religious, the more conservative, and the more favorable attitudes toward the institution now attended are likely to be found in the following activity groups in decreasing order: religious, musical, sorority, non-activity, athletic, fraternity.

NYA Work and Student Attitudes

Another factor which is sometimes designated as an influence on student attitudes is that of Government aid to students. Is there a significant difference in the attitudes of aid and non-aid students? If so, how does it affect the attitudes considered in this investigation? Of the 3,755 students considered in this part of the study, 847 were on the rolls of the *NYA* while 2,908 were classed as non-*NYA* students. The conclusions based on the data from these 18 institutions may be summarized as follows:

1. The attitudes of *NYA* students do not differ significantly from those of other students except in the case of attitudes toward Sunday observance. *NYA* students are significantly more favorable toward Sunday observance than are their fellow students.

2. Although the differences are slight and not statistically significant, *NYA* students are more religious and more conservative than non-*NYA* students. The two groups are approximately equal in their attitudes toward the college attended.

Since whatever differences do exist between the attitudes of *NYA* and non-*NYA* students are in the direction of greater conservatism and stronger religious attitudes on the part of the *NYA* students, there seems to be no cause of fear of the influence of this factor—at least not in the direction of radical or irreligious attitudes.

Fathers' Vocation and Student Attitudes

Much has been written of the influence of the home on children's attitudes. Kroger and Louttit (9) report evidence that high school students are influenced by father's occupation in their choice of occupation. Kulp and Davidson (10) report a correlation of .32 between high school siblings on international attitudes as compared with a correlation of approximately zero between random pairs of high school students. Higher intelligence ratings have usually been reported for children coming from professional groups and lower mean scores for children coming from the ranks of labor (16).

Is there a relation between the father's vocation and the attitude of a son or a daughter in college? If major occupations were ranked on the basis of student attitudes would they fit into a socio-economic scale as neatly as do occupations ranked on the basis of children's intelligence? Do the attitudes of sons of bankers differ from those of men from the farm? Will the lawyer's daughter tend to reveal more conservative attitudes than the co-ed from a laborer's home? Will the much criticized minister's children be more or less religious than their associates when they "go off to college?"

In spite of the alleged "waning influence" of the American home, there seems to be a definite relationship between one home factor,[4] father's vocation, and the attitudes of children in college (16). Again we present conclusions in brief summary form:

1. The existence of a relationship between father's vocation and

[4]Father's vocation is, of course, only one of a number of home factors. Other home factors such as parents' church relationship, education of parents, attitudes held by parents, financial standing, and location of home are factors which may be related to still greater student attitude differences.

student attitudes is indicated by each of the attitude measures considered in this study. The reflection of father's vocational outlook in the attitudes of students is most strikingly seen in the case of the ministry.

2. In none of these attitude areas do vocations ranked on the basis of student attitudes fit into a socio-economic scale with professions at the top and labor at the bottom. In this respect our attitude-fathers'-vocation relationship differs from the studies of fathers' vocation and children's intelligence.

3. The homes of dentists, journalists, lawyers, farmers, laborers, and commercial men seem to provide the more conservative attitudes while the most liberal students considered in this study came from the homes of teachers and social workers. The former groups proved the more homogeneous, the latter less so.

4. The most religious group in this study comes from church parsonages—followed closely by students from the farm and from the homes of laborers. Apparently the largest single source of highly religious attitudes is the farm. The less religious groups come from the medical profession, from teaching, railroading, and law. Significant attitude differences are found on each of the four religious scales used.

5. On all four religious measures (Sunday, Church, God-Reality, God-Conduct), the classification of students by fathers' vocations reveals differences even greater than the freshman-senior differences shown in the previous chapters. Fathers' vocation seems to have more influence upon student attitudes than does classification by year in college.

6. The strongest approval of the institution attended comes from the homes of ministers, doctors, men in government service, and teachers.

Summary

In this chapter, we have considered a number of factors somewhat related to student religious attitudes. Apparently there is no immediate danger of extreme radicalism on the college campus. The data from these 18 institutions indicate mildly conservative attitudes for most of the students measured. Instead of alarm over the possibility of radicalism among students, it is possible that a more grave danger is that of complacency among college youth.

However, seniors are significantly less conservative than are freshmen. Women are more conservative than men, and the institutions with the higher religious scores are also the more conservative. Only 22 individuals out of 3,785 students in these 18 institutions can be termed "radical."

Student attitudes toward the college now attended indicate general approval. The institutions whose students have been found to be most religious and most conservative are also strongest in student approval of the college attended. This relation between attitudes is again seen in the case of sex differences. Women who were seen to be more religious and conservative than men are also significantly higher in their score of institutional approval than men.

Even campus activities seem related to student attitudes. The more religious, the more conservative, and the more favorable attitudes toward the college attended were found among students who were active in campus religious organizations. The least religious and the least conservative attitudes were found among students belonging to fraternities.

Student aid of the *NYA* type seems to be a significant factor in the case of student attitudes toward Sunday observance. Although most of the attitude differences between *NYA* and non-*NYA* students are not statistically significant, the differences which do exist are in the direction of greater conservatism and stronger religious attitudes on the part of *NYA* students.

The home factor, Fathers' vocation, is not only related to significant attitude differences, but the fathers' vocation seems to have more influence upon student attitudes than does classification by year in college. The most religious group in this study comes from the church parsonages, while the farm is the largest single source of highly religious attitudes.

Thus we see student religious attitudes not only related to type of institution, individual colleges of a certain type, geographic location of college, year of student in college, and sex, but religious attitudes are related to such other attitudes as social-economic-political conservatism and approval of the college attended. Religious attitudes are also related to such other factors as student campus activities and fathers' vocations.

VIII. SUMMARY

We began this study by considering a number of questions which have been raised concerning the religious attitudes of college and university students. Are modern students atheistic? What are their attitudes toward "keeping the Sabbath," toward the church, toward God as a reality, toward God as an influence on personal conduct? Are modern co-eds more religious than college men? What college class differences, institutional and geographic differences obtain in the sphere of religious attitudes of students?

In the effort to throw light on these questions, a plan of study was followed which differs from previous studies in one or more of the following respects: Instead of a simple questionnaire, scales constructed by the method of equal-appearing intervals were used. Instead of one test for the complex religious field, a battery of four of Thurstone's scales was used in considering as many angles of this important field. A rather broad sampling of subjects was secured in 18 different institutions including four state universities, six Lutheran colleges, three Friends colleges, and one from each of the following denominations: Methodist, Presbyterian, Adventist, United Brethren, and Catholic. The study included institutions in the Midwest, the East, and in the South. A total of 3,758 students are included in this study distributed among the four classes and between the sexes.

Since conclusions concerning religion on the campus are dependent upon student attitudes toward various phases of the religious sphere, we shall briefly present conclusions from each area out of which the answer to the general question may be inferred.

Sunday Observance

The attitudes of these college and university students may best be described as neutral or slightly favorable. Since this question involves not only the religious issues, but also the legal, social and economic aspects of the issue, the problem is decidedly complex. For the group as a whole, freshmen are most favorable toward Sunday observance and seniors least so. Women are significantly more favorable toward Sunday observance than men. The freshman-senior difference is greater for women than for men but is in the same direction—lower scores for seniors.

The Church

The attitudes of students in these 18 institutions are definitely favorable toward the church. Only 55 persons scored in the lowest four intervals compared with 3,464 persons scoring in the upper four intervals indicating the proportion of students favorable as contrasted with those opposed to the church. Freshmen are most favorable toward the church and seniors least so. Although in some institutions is found a very slight upturn in the junior year, this usually is more than lost when we come to seniors. Women are more favorable toward the church than men, their attitudes toward the church are more homogeneous, but their freshman-senior difference is greater than among men.

The Reality of God

In contrast with the reports of some studies concerning the attitudes of college students toward the reality of God, this study indicates a belief in God on the part of 84 per cent of these students. Only four per cent of these college and university students scored in areas which could be classed atheistic. Again freshmen attitudes are most favorable toward God, with the smallest dispersion of scores, while seniors are least favorable. Women are significantly stronger in their belief in the reality of God than men, show less dispersion of attitude scores, and again, the difference between freshman and senior women is greater than between freshman and senior men.

God as an Influence on Conduct

The attitudes of these college and university students toward God as an influence on conduct is not only favorable but is slightly higher than their attitudes toward the reality of God. The mean scores for the group as a whole and for every institution indicates definite recognition of the influence of a belief in God on conduct Again, freshmen are most favorable and the junior and senior classes least so. For the group as a whole and for each class, women indicate a stronger recognition of God as an influence on conduct.

There is less dispersion of scores among women than among men and again the freshman-senior difference is greater among women.

Institutional Differences

Pronounced attitude differences are evident among educational institutions, even if affiliated with the same body. Still more significant are the attitude differences between types of institutions as summarized in Table 37.

TABLE 37

Summary of Data Concerning Student Religious Attitudes

Institutions	Attitudes toward:	Sunday observance	The Church	Reality of God	Influence of God on conduct
State Uni.	Mean	5.09	8.53	7.60	7.40
	SD	1.46	1.39	1.47	2.08
Lutheran	Mean	6.12	9.01	8.04	8.33
colleges	*SD*	1.53	.94	1.28	1.61
Friends	Mean	5.87	8.73	7.99	8.13
colleges	*SD*	1.49	1.16	1.36	1.87
Methodist	Mean	5.82	8.91	7.89	8.05
university	*SD*	1.50	1.04	1.23	1.65
Presbyterian	Mean	5.76	8.96	8.01	8.14
college	*SD*	1.43	.92	1.19	1.80
Adventist	Mean	6.46	9.34	8.58	9.22
college	*SD*	1.34	.83	1.05	1.16
U. Brethren	Mean	6.22	9.11	7.93	8.40
college	*SD*	1.45	.90	1.44	1.57
Catholic	Mean	6.16	9.98	8.74	9.25
college	*SD*	1.34	.67	.91	.94

The state universities may be characterized as slightly below the neutral point in their attitudes toward Sunday observance, definitely favorable toward the church and toward God. The dispersion of scores is greater for state universities than for any of the other institutional types in the attitudes concerning the church, the reality of God, and the influence of God on conduct, but is less than some of the other groups in the case of Sunday observance.

Lutheran colleges as a group are slightly above the neutral point in their attitudes toward Sunday observance, strongly favorable toward the church, strongly favorable toward God. These students are exceeded in their attitudes toward the reality of God by only two institutions and in their attitudes toward the church and toward God as an influence on conduct, by only three institutions among the 18 schools studied.

Student attitudes at the Friends colleges are slightly favorable toward Sunday observance, strongly favorable toward the church and toward God.

Attitudes at the Methodist university and at the Presbyterian college are slightly favorable toward Sunday observance, strongly favorable toward the church and toward God.

Student attitudes at the United Brethren college are slightly favorable to Sunday observance, very strongly favorable toward the church, in fact more so than 15 out of the 18 institutions studied. Student attitudes definitely favor a belief in the reality of God and still more strongly emphasize His influence on conduct.

In the Adventist college are found the strongest attitudes toward sabbath day observance among the 18 colleges and universities. This institution is excelled by only one other institution in its strongly religious attitudes toward the church and toward God, both as a reality and as an influence on conduct. These students are also more homogeneous in their religious attitudes in all areas than are the students in most of the other institutions studied.

Student attitudes at the Catholic college may be characterized as extremely conservative (15), slightly favorable toward Sunday observance, extremely favorable toward the church, toward God and especially toward His influence on conduct. Of the 18 colleges and universities included in this study, the mean scores at this Catholic college are highest and the dispersion of scores lowest in every area excepting that of Sunday observance. These high mean scores and small measures of deviation can be accounted for only in small part by the fact that women only were tested at this institution.

Related Factors

Closely related to the question of religion on the campus are certain other factors which require only brief mention in this summary.

Instead of radicalism on the campus as has been popularly alleged, these students are somewhat "to the right of centre." Seniors are significantly less conservative than freshmen and women more conservative than men. On the whole, the institution, the class, and the sex having the higher religious scores showed the stronger conservatism.

The institutions and the sex (women), having the higher religious scores and the stronger conservatism showed the stronger approval of the college attended.

Student religious attitudes are related to student activities on the

campus. The more religious, the more conservative, and the more favorable attitudes toward the college attended were found among students active in campus religious associations.

NYA students are significantly more favorable toward Sunday observance than non-*NYA* students. Attitude differences in the other areas were not significant.

Fathers' vocation seems to have more influence upon college students' attitudes than does classification by year in college.

Student Attitudes Toward Religion

In conclusion, these college and university students seem to be strongly favorable toward the church, they believe in the reality of God, they are even stronger in their attitudes toward God as an influence on conduct, and they are neutral or slightly favorable toward Sunday observance. This general direction of student religious attitudes is the point of most far-reaching importance in the entire study.

Yet the differences found are of interest and of practical significance. In general, students at denominational colleges are more religious than students at state universities. Institutions located in the South are more religious than those in the North. Women are more religious than men in each one of the religious areas, and freshmen show higher religious scores than seniors. The more conservative students and those showing stronger approval of the college attended are also the more religious.

The differences might be summarized in rather crude fashion by using our statistical data to identify a mythical "highly religious student." Such a highly religious student would more likely be found in denominational colleges than in state universities, probably at a Catholic or an Adventist college, in the South rather than in the North or Midwest, in the freshman class rather than among upper classmen, among college women rather than among men, among conservative students rather than among liberals, among students who strongly approve the college now attended, among students who are active in campus religious activities, possibly among *NYA* students, and her home is probably a church parsonage.



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THE PREDICTION OF THE OUTCOME-ON-FURLOUGH OF DEMENTIA PRAECOX PATIENTS*[1]

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Acknowledgment 427

I. Statement of the problem and review of the literature . . 429

II. *Procedures used in the present study* 437

III. Results 443

IV. Conclusions and recommendations 451

References 453

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I. STATEMENT OF THE PROBLEM AND REVIEW OF THE LITERATURE

A. Statement of the Problem

The major problem of the present study was to construct a scale, based on items contained in hospital case history records, for predicting the readmission or non-readmission of dementia praecox patients furloughed or discharged from the State Hospital at Milledgeville, Georgia. The scale has been designed so that each patient considered for furlough may be objectively rated, and the total score thus obtained used to indicate the probability (expressed as chances in 100) of readmission or non-readmission of the patient for further institutional treatment.

B. Review of the Literature

The summary of the literature has been limited to selected studies specifically related to the prognosis of mental disorders, and to studies emphasizing the special techniques of prediction similar to those utilized in the present study.

1. *The Prognosis of Mental Disorders*

One of the better recent studies of the prognosis of mental diseases was that reported by Malamud and Render (12), who studied 309 cases of schizophrenia. A list of primary and accessory features characterizing schizophrenia was presented, prefaced by the statement, "Schizophrenia is a process disease, the causes of which are not adequately known but are most probably multiple in nature." Each case record was analyzed according to the features enumerated, and according to age, sex, physical build, pre-morbid personality, intelligence quotient, somatic findings, and permeability quotients. Additional factors studied included heredity, civil status, previous attacks, onset, precipitating factors, and the course of the disease in the hospital.

In addition to the analyses of the data on the total group of 309 cases, separate analyses were made of 177 cases discharged before 1933, with the follow-up period covering five to nine and one-half years, and of 39 cases admitted in 1936, with the follow-up period covering 16 to 28 months. On the basis of this subdivision it was

found that cases should be followed up five or more years before valid generalizations as to prognosis could be made.

The patients were classified according to six categories, as follows:

I. Complete Recoveries	14 per cent
II. Social Recoveries	8 per cent
III. Pronounced Improvement with Defect	3 per cent
IV. Slight Improvement with Defect	7 per cent
V. Unimproved	58 per cent
VI. Dead	10 per cent

"Favorable" and "unfavorable" factors were enumerated on the basis of the relative proportions appearing in the six categories listed above. For example, if more than 14 per cent of the males were rated "complete recovery," then male sex was considered a factor favorable to complete recovery. "Favorable" factors included: male sex; onset in either the second or fourth decades; normal and athletic physical types; cyclothymic personality; intelligence quotient above 105; somatic pathology; positive heredity; married civil status; previous attacks of a type different from the present attack; acute onset; definite precipitating factors (especially physical, sexual, and economic problems); improvement while at the hospital; positive affect; motor overactivity and confusion.

"Unfavorable" factors included: female sex; onset in the third decade; dysplastic and pyknotic physical build; schizoid personality; intelligence quotient below 100, and a "scatter" of incorrect responses of five years or more; single civil status; absence of precipitating factors; gradual onset; progressive course while at the hospital; dull apathetic affect; visual hallucinations; poor contact and autism. The customary diagnostic subdivisions—simple, catatonic, hebephrenic, and paranoidal—were found to have no relationship to the prognosis.

In discussing the results of this study, Malamud and Render stated that:

> It is somewhat discouraging to find that the psychiatric symptomatology as tabulated in our results affords very few if any points of importance in prognosis. . . .

Kasanin and Cook (8) studied 100 cases in a private hospital discharged against advice, including 21 cases of schizophrenia. Of

the 100 cases, 44 were sent to state hospitals, 24 were still in various hospitals, 4 had died, and 16 had been discharged back into the community. Thirty-six of the 100 cases were able finally to remain permanently in the community. One-third of the schizophrenic patients were able to adjust themselves to the community, whereas two-thirds of the manic-depressive patients had made satisfactory social adjustments.

By means of letters addressed to relatives, or to the former patients themselves, F. I. Wertham (15) followed up 193 patients discharged against advice. There was no information on 21 patients; one was in jail; 15 remained at home, unimproved; eight had committed suicide, and one other was deceased, a possible suicide; and seven had died other than by their own hands. Of the remaining 140 cases, 69 had made satisfactory adjustments, and 71 had been returned to mental hospitals.

Klein and Cohen (9) followed up 162 patients, 18 of whom had died. Of the remaining 144, 87 per cent had failed to adapt themselves to the community (74 per cent had been rehospitalized), while only 13 per cent made adjustments, of varying quality, to the community.

The 1937 Year Book of Neurology, Psychiatry, and Endocrinology (13) summarized two studies dealing specifically with schizophrenia. In one study reported, data were presented dealing with the course of schizophrenia in 382 cases. Of 348 catatonic cases, for example, 25.6 per cent were out and working, 14 per cent had died, and 42 per cent were still hospitalized. Favorable outcome was associated "to some extent" with youthfulness and with acute rather than gradual onset. Patients who showed motor agitation and speech disturbances had a better prognosis than emotionally disturbed patients. The second study reported led to the conclusion concerning schizophrenia that bad family history, sexual manifestations, sunstroke, shock due to operations, economic and social factors do not seem to influence the prognosis, but that alcoholism makes the prognosis worse.

The studies related to prognosis generally failed to establish objective criteria for measuring the outcome of mental disorders. Psychiatric ratings of out-patient adjustment have undoubted value, but there are no data available to indicate the reliability and the

validity of such ratings. The studies cited—especially that of Malamud and Render—failed to apply current statistical techniques in order to utilize the cumulative effects of numerous factors slightly but significantly related to the prognosis of mental disease.

2. *The Special Techniques of Prediction*

The fundamental techniques and principles of prediction described in this section were first employed by Burgess (1, 2), the Gluecks (5, 6), Hart (7), and others in predicting the parolability of prisoners. However, the study by George B. Vold (14) was selected for a detailed presentation here because of Vold's careful application and cautious interpretation of the method and results in the field of criminology. This relatively high evaluation of Vold's study was concurred in by Elkind and Taylor (3) in their critical analysis of the Gluecks' work, in which Elkind and Taylor stated, "Vold has done, we believe, the best piece of work in this field."

a. Vold's study. In 1931, Vold published a study which sought to compare and to extend the methods of predicting the "outcome on parole" designed by Burgess and his associates, on the one hand, and by the Gluecks, on the other. Vold gathered data on 542 prisoners and 650 reformatory inmates paroled in the State of Minnesota between 1922 and 1927. He constructed several scales based on the "Burgess" and the "Glueck" methods, and established tables on the "experience and expectancy rate of parole violation."

One fundamental principle underlying the technique used by Vold, Burgess, the Gluecks and others, and followed in the present study, is that " . . . the cumulative effects of many factors, individually of little significance, may become very important when operating together."

Vold arranged the case history data according to three outcome-on-parole groups—non-violators, minor violators, and major violators. Coefficients of contingency were computed between these three outcome-on-parole groups and 44 items of information on which sufficient data were obtained. The values of the contingency coefficients ranged from .283 to .050, all negligible degrees of relationship when interpreted singly.

Half of the cases studied were used as the "operating group," and half as the "control group." Cumulative tables for predicting

outcome-on-parole were then constructed, using three different scales. One scale utilized only those categories of data having a C value of .100 or above, of which there were 17 factors; another scale used the 17 categories showing the lowest C values; the third used a combination of 25 factors selected on the basis of the completeness of information on all cases.

The "Burgess" method of scoring was used with all three scales. The percentage of cases violating parole in each subclassification of each category was computed. Each parolee was then scored one point for every category under which he was classified, provided that the subclassification in which he was listed had a violation rate lower than the average for the institution. For example, 12.8 per cent of the inmates paroled and living on farms or in the open country violated parole, whereas 21.8 per cent of the total number of parolees violated parole. Consequently, an inmate in the subclassification " . . . farm or open country," of the major factor, "size and type of community into which inmate was paroled," received a score of one, because the subclassification had a violation rate lower than the average for the institution.[2] The maximum score was 17 points for two of the scales, and 25 points for the third scale. Negative scores were not considered.

The Glueck method for scoring was used with only one scale, due to the enormous amount of extra statistical work required. With the Glueck method of scoring, each individual inmate received as a score the percentage of failures in each subclassification in which he was listed, regardless of the average percentage of failures for the institution as a whole. Continuing the example cited above, an inmate in the subclassification " . . . farm or open country" would receive a score of 12.8, because 12.8 per cent of the parolees in this subclassification violated parole.

Vold stated that the most satisfactory discrimination between the three outcome-on-parole categories was obtained with the scale based on the 25 selected factors having some information in nearly all cases (i.e., Vold's third scale). A contingency coefficient of .504 was computed by the present writer between the three outcome-on-parole categories and the scores based on this scale.

Several limitations to Vold's study should be mentioned. In the

[2]Vold did not actually include this item because it was a post-parole factor.

first place, Vold did not indicate the reliability of the percentage of parole violators in each subclassification of each major factor. The reliability of such percentages depends on the size of the percentage in relation to the total violation rate, and on the total number of cases in a given subclassification. It is quite possible that several of the percentages were unreliable when the major factors contained a number of subclassifications, with a correspondingly smaller number of cases in each subclassification. In the second place, Vold failed to give coefficients of contingency to indicate statistically the general discriminative capacity of his scales, which had to be appraised by inspection.

b. Other studies. The Gluecks (5) computed 50 contingency coefficients between pre-parole factors and post-parole criminal conduct. Proceeding on the assumption that a relatively few factors with high contingency coefficients with the three outcome-on-parole categories were as useful as many factors with low such coefficients, they selected eight factors for use in constructing their best prognostic table. An inmate's score on each factor was the actual percentage of "total failures" in the subclassification in which the inmate was listed, a low total score indicating higher probabilities for success in post-parole conduct. A contingency coefficient of .48 was obtained between the scores and post-parole criminality on 510 cases. It should be noted that the cases used to form the experience tables were the same used in selecting the differentiating items.

Ferris F. Laune (10) attempted to supplement Burgess' scale by analyzing the "hunches" of four selected inmates regarding the parolability of 150 other inmates known to these four raters. A battery of 1,691 questions was compiled to cover 54 factors which presumably influenced the size of the "hunch scores" assigned by the four raters. These questions were administered to a "truth group" of 57 inmates. Total scores built up on the basis of the questionnaire results exhibited a correlation of .68 with the raters' "hunch scores," and a correlation of .62 with "Burgess" scores. These correlations did not remain the same when the scale was administered to a new group of inmates. With a new group of inmates, the questionnaire scores correlated .39 and .30 with the "hunch scores" and with the Burgess scores, respectively.

Obviously, Laune's study is open to very serious criticisms. In

the first place, Laune did not establish the validity of the "hunch scores"; he assumed they were valid because the scores assigned by the two "best" raters had a correlation of .62. In the second place, the scale used for predicting success on parole was based on subjective factors throughout, and was validated by a series of correlations with the "hunch scores" of four selected inmates—a criterion of validity which itself has very questionable validity. There were no data on actual paroles presented anywhere in the study, though Laune did state that an empirical check on the validity of the scale would be made after sufficient time had elapsed.

c. A prediction study in mental hygiene. One study in the literature dealt with the use of a test for predicting the probability of continuous community residence after discharge from a mental hospital (11). Unfortunately, no correlation coefficients nor other statistical controls were reported, and it was impossible to evaluate the instrument except in very tentative terms.

Scores were obtained with a set of three "life situation tests" on an unselected group of 233 patients. It was stated that the scores "correlated" closely with the average length of residence in the community, though no relationship had been found with the manic-depressive patients. The claim for validity of the test was based on the high degree of "correlation" obtained with the length of residence in the community, and the claim for reliability was based on retests made from three to six months after the original application of the test. Information regarding the patients' community adjustments was secured largely by means of a questionnaire.

Tables were presented showing the distribution of patients according to the five possible "scores" on the test and the following groupings: (*a*) patients living in the community with no supervision; (*b*) patients living in the community under some supervision; (*c*) patients still in the hospital; (*d*) patients who had died. Accepting the latter groups as a criterion of prognosis, the present writer obtained a *C* of .33 on 102 dementia praecox patients (six patients who had died were eliminated). This coefficient must be interpreted cautiously, however, until information is obtained as to the types of cases studied; the basis for classification into supervised and unsupervised out-patients; the basis for selecting the patients discharged, and the reliability and validity of the three "life-situation"

tests. It is quite possible that the tests differentiated merely between those who were oriented enough to make relatively normal responses to simple questions. Furthermore, it is not likely that a test of five sub-items could reliably differentiate between those patients capable of readjusting to community life and those who are not able to make readjustments. It also seems that great consistency of results after a period of six months would indicate that the test has nothing to do with the current mental status of the patient, an observation contrary to the implied relationship between the test and out-patient adjustment.

d. Summary. Several points regarding the Burgess and the Glueck techniques, as outlined by Vold, should be emphasized. Burgess (*a*) selected the discriminative items to be included in his scale by comparing the proportion of non-violators in a given subclassification with the proportion of non-violators in the entire sample; (*b*) assigned a weight of one to each such discriminative subclassification, and (*c*) included a large number of discriminative items in the scale. The Gluecks (*a*) selected major factors of information showing high contingency coefficients with the outcome-on-parole categories, and ignored the discriminative capacity of the subclassifications of these major factors; (*b*) assigned a weight for each subclassification equal to the percentage of major violators within the subclassification, and (*c*) included relatively few major factors in the predictive scale. The reliability of the items included in the Burgess and in the Glueck scales in reality depended upon the reliability of the percentages of non-violators or major violators within each subclassification. Burgess selected the scale items according to the gross amount of differentiation; the Gluecks assumed the discriminative capacity of the subclassifications was sufficiently established if the *C* values for each major factor were relatively high.

II. PROCEDURES USED IN THE PRESENT STUDY

A. Availability of the Data

A preliminary investigation was made to ascertain the nature and extent of the available data. The investigation showed that the reports filed by the County Ordinaries contained practically the only standardized records regarding the patient's socio-economic background and other related items of information. It was found necessary to exclude case history data compiled by the hospital staff because of the lack of uniformity in such data, and because much of the information thus recorded came only from the patient. The amount of data was further limited by the old record forms sent in by the County Ordinaries before the present form was adopted, by the inaccessibility of the records of patients who died in residence, and by the failure to locate certain individual records, probably due to changes in names and to the temporary removal of the records by members of the staff.

It should be noted that the customary subclassification of dementia praecox patients into four types—simple, hebephrenic, catatonic, and paranoidal—was not included in the psychiatric reports of the Milledgeville State Hospital. Data studied by Malamud and Render (12) indicated, however, that these subclasses bear no relationship to the outcome of the mental disease.

Preliminary analyses of the data by race showed that the various socio-economic patterns and the rates of furlough and readmission for Negroes diverged widely from those of the white patients. For example, the rate of readmission for Negroes was only half that for the whites, a difference that was significant in the absolute as well as the statistical connotation of the term. Consequently, the data on the Negro patients were discarded.

B. The Transcription Sheet

A verbatim copy of several case histories was made to serve as a guide in the construction of the data-gathering instrument (see Table A). This instrument, the transcription sheet, was designed with regard to (*a*) the availability of the data, (*b*) the order in which the various items of information were recorded, and (*c*) the code used in recording the information on Hollerith cards.

TABLE A

TRANSCRIPTION SHEET FOR VALIDATION GROUP: DATA ON DEMENTIA PRAECOX PATIENTS

No. .....
In ..... Out .....
Name ..... Address .....

	Race &			45	Paternal gm		
1	Sex			46	Maternal gf		
	Condition on			47	Maternal gm	Family history	
2	furlough			48	Father	of mental	
3	Date of			49	Mother	disease	
7	furlough			50	Paternals		
8	Date of			51	Maternals		
12	readmission			52	Siblings		
13	Time not in resi-			53	Others		
14	dence (months)			54	TOTAL NUMBER		
15	Date on 1st				Serious illness	0	no
19	admission			55	or operations?		
20	Duration of				Syphilis, T.B.,	0	no
21	residence			56	Cancer?		
22	(months)				Epileptic, Alco-	0	no
23	Age on first			57	hol or Drugs?		
24	admission				Previously in-		
	Civil			58	sane? treated?		
25	condition			Year of pre-			
	Religious			vious attack			
26	belief			Date of pres-			
27	Present			ent attack			
28	occupation			59	Months before		
29	Former			60	hospitalization		
30	occupation				Suicidal, homicidal,		
31	Husband's			61	violent, destructive?		
32	occupation				Dangerous with	0	no
33	Residence			62	fire?	1	yes
	Degree of				Noises, voices,	0	no
34	education			63	odors, visual?		
	Financial				Bedridden, paralyzed,		
35	status			64	crippled, blind?	0	no
	Average	1	yes		Informant's		
36	intelligence?	2	no	65	relationship		
	Business	1	yes		Condition on		
37	success?	2	no	66	last furlough		
Began.....				Date of last			
Ended.....Time in				furlough			
38	school			67	Lapse of time, 1st		
39	(total)			68	admission to last		
	Learn	1	yes	69	furlough (months)		
40	easily?	2	no		Total number		
	Temperament			70	of furloughs*		
41	as a child			71			
42	Disposition			72	Card number		
43	before insane			73			
44	Paternal gf						

*List dates of each furlough

1. 3.
2. 4.

C. The Selection of the Cases

Three criteria determined the inclusion or exclusion of any dementia praecox case: (*a*) the patient must have been hospitalized and furloughed at least once from the Milledgeville State Hospital; (*b*) the furlough must have occurred a minimum of five years previous to the time of the study (i.e., before 1935); (*c*) the County Ordinary's report on the case must have been recorded on the standardized record blanks now in use. The time limit allowing a lapse of five years since remission was necessary before any reliable classification could be made relative to outcome on furlough. Malamud and Render (12) likewise found that patients should be followed up five or more years before valid generalizations as to prognosis could be made.

D. The Samples

One group of 319 dementia praecox cases—referred to hereinafter as the "working sample"—was used in locating and weighting the items incorporated in the predictive scales. A second group of 108 cases—the "validation sample"—was used to demonstrate the discriminative capacity of the scales on a different group of cases. Each sample was divided into four "outcome-on-furlough" categories, each category indicating a certain degree of "success" following release from the Milledgeville State Hospital. These categories were as follows:

I. Those patients who returned from the given furlough within five years from the date of furlough, and were in the hospital at the time of the study. This was the "least successful" group.

II. Those patients who were readmitted within five years of the given furlough, but had a subsequent remission and were out of the hospital at the time the study was made.

III. Those patients who were not readmitted for five years following the given furlough, but had had readmissions, or "failures," previous to the given furlough.

IV. Those patients who were not readmitted for at least five years following the given furlough, and for whom the given furlough was the first remission. This was the "most successful" group.

These four outcome-on-furlough categories constituted the criterion used in selecting the specific items included in the scale for predicting the readmission or non-readmission of patients following furlough from the Milledgeville State Hospital.

E. The Techniques of Prediction

The techniques of prediction followed in this study consisted of modifications of the techniques applied by Burgess, the Gluecks, and Vold. The principle underlying these techniques is that the cumulative effects of many relatively undifferentiating factors may be utilized to construct an instrument with significant predictive value. An analogy might be drawn from the field of mental testing. No single item in a test of intelligence has great predictive value, but the cumulative effects of the total battery of items in a test bear meaningful relationships to the various validating criteria.

Contingency tables were constructed with the four outcome-on-furlough categories on one axis, and the various factors—age, marital status, length of hospital residence and the like—on the other axis. Coefficients of contingency demonstrated that certain relationships existed beyond the degree expected by chance between the criterion and these variables.

The percentage of cases falling in the fourth outcome-on-furlough category (the "most successful" group) was computed for each subclassification of each major factor. The reliability of the percentage of cases in each subclassification of each major factor was interpreted in terms of the "chances in 10,000" that on subsequent samples the given percentage would actually be larger or smaller than the total percentage of fourth category cases. This entire procedure is illustrated in Tables 1 and 2. Table 1 shows the distribution of cases in the working sample according to the four outcome-on-furlough categories, and the major classification, "condition on furlough." Table 2 shows the reliability of the percentages falling in the fourth category, according to the same subclassifications.

Fifty per cent of the cases furloughed as "restored" were in the fourth outcome-on-furlough category; 36.4 per cent of the patients furloughed as "improved," and 23.8 per cent of the patients furloughed as "unimproved," were in this fourth or "most successful" category. Since there was a total of 33.2 per cent furloughed in the

TABLE 1

DISTRIBUTION OF THE FOUR OUTCOME-ON-FURLOUGH CATEGORIES ACCORDING TO "CONDITION ON FURLOUGH"[a]

	Still in the hospital		Returned, remission later		Still out, previous failures		Still out, first remission[b]		Total	
Subclass	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
Restored	7	35	2	10	1	05	10	50	20	100
Improved	67	34	45	23	14	07	72	36	198	100
Unimproved	59	58	10	10	8	08	24	24	101	100
Total	133	42	57	18	23	07	106	33	319	100

[a]Similar tables were prepared on all factors studied. *C* equals .14 on these data.

[b]The table should be read as follows: 50 per cent of the patients furloughed as "restored" were in the fourth or "most successful" outcome-on-furlough category.

TABLE 2

RELIABILITY OF THE PERCENTAGES IN THE FOURTH OUTCOME-ON-FURLOUGH CATEGORY BY "CONDITION ON FURLOUGH"[a]

Subclass	Per cents	Sigma %	Diff. (—33.2)	x / sigma	Chances 10,000
Restored	50.0	11.2	16.8	1.50	9332[b]
Improved	36.4	3.5	3.2	.91	8186
Unimproved	23.8	4.2	— 9.4	2.24	9875

[a]Similar analyses were made of all factors studied.

[b]The table should be read as follows: there are nine chances out of ten that on subsequent samples the percentage of patients in the fourth outcome-on-furlough category furloughed as "restored" will be greater than the total average of 33.2 per cent.

fourth category, a patient furloughed as "restored" had a much greater-than-average chance of being in the fourth outcome-on-furlough category. Similarly, a patient furloughed as "unimproved" had a less-than-average chance of being in the fourth category.

There were over nine chances in ten that on subsequent samples the percentage of patients furloughed in the subclassification "restored" would have a greater-than-average chance of being in the fourth outcome-on-furlough category (Table 2). Similarly, there were more than nine chances out of ten that on subsequent samples the patients furloughed as "unimproved" would have a less-than-average chance of being in the fourth outcome-on-furlough category.

Tables 1 and 2 illustrate the procedures employed with each of the 22 major factors studied. All subclassifications were included in the scales that showed at least nine chances out of ten that on subsequent samples the percentage of cases falling in the fourth outcome-on-furlough category would be greater or less than the total average expectancy (33.2 per cent).

Two scales were constructed, both including all the "reliable" subclassifications of the major factors. The score value for each item in the "weighted scale" was the difference between the percentage of "most successful" cases in any subclassification and —33.2 per cent, a procedure which yielded scores with positive and negative weights. The "unweighted scale" grew out of the weighted scale, in which all scale items were given the arbitrary weight of plus or minus one.

By reference to Table 2, it can be seen that a patient furloughed as "restored" received a score of plus 17 (16.8) on that subclassification, because 50 per cent minus 33 per cent is plus 17. Likewise, a patient furloughed as "unimproved" received a score of minus nine, because 24 per cent minus 33 per cent is minus nine. A patient furloughed as "improved" received a score of zero. This subclassification was not incorporated in the scale because there were less than nine chances out of ten that on subsequent samples the percentage of patients furloughed as "improved" would be greater than the total average expectancy (i.e., 33.2 per cent).

The cases in the working sample and in the validation sample were scored on both the weighted and the unweighted scales. The scores were then correlated with the four outcome-on-furlough categories, resulting in experience and expectancy tables based on the various distributions, and showing a certain degree of discriminative capacity. The combined samples were analyzed on the same basis, and furnished the norms for the prediction of the readmission or non-readmission of patients furloughed from the Milledgeville State Hospital.

III. THE RESULTS OF THE STUDY

Table 3 presents the reliability of the percentages of fourth outcome-on-furlough category patients (non-readmitted following first

TABLE 3

RELIABILITY OF THE PERCENTAGE OF PATIENTS IN THE FOURTH OUTCOME-ON-FURLOUGH CATEGORY, BY ALL SUBCLASSIFICATIONS

Factors and subclassifications	Per[a] cents	Sigma %	Diff. (—33.2)	x / sigma	Chances[b] 10,000
Condition on furlough					
Restored	50.0	11.2	16.8	1.50	9332*
Improved	36.4	3.5	3.2	.91	8186
Unimproved	23.8	4.2	— 9.4	2.24	9875*
Lapse of time, first adm. to given furlough					
00-09	49.0	4.1	15.8	3.85	9999*
10-19	25.0	6.0	— 8.2	1.36	9131*
20-29	21.4	7.7	—11.8	1.53	9370*
30-39	40.9	10.5	7.7	.73	7673
40-49	13.3	8.8	—19.9	2.26	9881*
50-59	9.1	8.7	—24.1	2.77	9972*
60-up	4.8	3.3	—28.4	8.61	10000*
Age on first admission					
under 20	32.4	8.0	— .8	.10	5389
20-29	29.5	4.1	— 3.7	.90	8159
30-39	33.0	4.9	— .2	.04	5160
40-49	42.9	7.1	9.7	1.37	9147*
50-up	34.8	10.0	1.6	.16	5636
Civil status					
Single	33.9	3.6	.7	.19	5753
Married	36.5	4.5	3.3	.73	7673
Widowed	14.3	13.2	—18.9	1.43	9236*
Divorced	23.1	11.7	—10.1	.86	8051
Separated	21.4	11.0	—11.8	1.07	8577
Present occupation					
None	29.8	4.1	— 3.4	.83	7976
Farming	37.0	6.6	3.8	.58	7190
Labor	27.0	7.3	— 6.2	.85	8023
Domestic	42.2	5.4	9.0	1.67	9525*
Student	14.3	9.4	—18.9	2.01	9778*
Semi-professional	28.6	17.1	— 4.6	.26	6026
Place of residence					
City	36.3	4.5	3.1	.69	7549
Village	26.2	6.8	— 7.0	1.03	8485
Country	32.9	3.6	.7	.19	5753

TABLE 3 (*continued*)

RELIABILITY OF THE PERCENTAGE OF PATIENTS IN THE FOURTH OUTCOME-ON-FURLOUGH CATEGORY, BY ALL SUBCLASSIFICATIONS

Factors and subclassifications	Per[a] cents	Sigma %	Diff. (—33.2)	x / sigma	Chances[b] 10,000
Degree of education					
None	22.2	13.9	—11.0	.79	7852
Read and write	31.3	6.7	— 1.9	.28	6130
Common School	31.9	3.6	— 1.3	.36	6406
High School	36.6	5.7	3.4	.60	7257
College	41.7	10.1	8.5	.84	7995
Financial status					
Dependent	34.0	2.8	.8	.29	6147
Marginal	25.8	7.9	— 7.4	.94	8264
Comfortable	42.1	11.3	8.9	.79	7852
Average intelligence					
Average	36.4	3.2	3.2	1.00	8413
Below average	24.3	4.9	— 8.9	1.82	9656*
Success in business					
Successful	44.1	5.4	10.9	2.02	9783*
Unsuccessful	28.2	3.7	— 5.0	1.35	9115*
No business	32.9	5.3	— .3	.06	5239
Time in school (years)					
00	9.1	8.7	—24.1	2.77	9972*
01-03	33.3	15.7	.1	.01	5040
04-06	39.1	10.2	5.9	.58	7190
07-09	31.6	4.2	— 1.6	.38	6180
10-12	33.3	4.6	.1	.02	5080
13-15	46.1	9.8	12.9	1.32	9066*
16-up	28.5	17.1	— 4.7	.27	6064
Ability to learn					
Average ability	34.8	3.0	1.6	.53	7019
Below average	30.0	6.5	— 3.2	.49	6879
Unknown	27.8	10.6	— 5.4	.51	6950
No schooling	14.2	13.2	—21.0	1.59	9441*
Temperament as a child					
Obedient	33.3	4.1	.1	.02	5080
Obstinate	36.4	10.2	3.2	.31	6217
Sociable	33.3	13.6	.1	.01	5040
Selfish	50.0	25.0	16.8	.67	7486
Cheerful	33.3	13.6	.1	.01	5040
Morose	23.1	11.7	—10.1	.86	8051
"Favorable" items	35.4	6.1	2.2	.36	6406
"Unfavorable" items	33.3	15.7	.1	.01	5040
Mixed classification	18.2	11.6	—15.0	1.29	9015*
Unknown	26.7	8.1	— 8.5	1.05	8531
Other items inserted	46.7	12.9	13.5	1.05	8531

TABLE 3 (*continued*)
RELIABILITY OF THE PERCENTAGE OF PATIENTS IN THE FOURTH OUTCOME-ON-FURLOUGH CATEGORY, BY ALL SUBCLASSIFICATIONS

Factors and subclassifications	Per[a] cents	Sigma %	Diff. (—33.2)	x / sigma	Chances[b] 10,000
Disposition before insane					
Sociable	44.6	6.2	11.4	1.84	9671*
Normal	31.7	4.1	— 1.5	.37	6443
Docile	36.1	7.0	2.9	.41	6591
Distant, and below	24.7	4.8	— 8.5	1.81	9616*
No. abnormal relatives					
None	37.9	3.9	4.7	1.21	8869
One	27.7	4.7	— 5.5	1.17	8790
Two	35.4	6.9	2.2	.32	6255
Three or more	21.4	7.7	—11.8	1.53	9370*
Illnesses, operations					
None	35.3	3.5	2.1	.60	7257
Illnesses	30.1	5.7	— 3.1	.54	7054
Operations	30.0	7.3	— 3.2	.44	6700
Ill. and operations	33.3	12.2	.1	.01	5040
Traumatic	25.0	12.5	— 8.2	.66	7454
Previous episodes					
None	34.9	3.0	1.7	.57	7157
Yes, home treated	30.0	8.4	— 3.2	.38	6480
Nervous breakdown	20.0	17.9	—13.2	.74	7704
Yes, institutional	25.0	8.2	— 8.2	1.00	8413
Dangerous with fire					
Yes	42.1	4.6	8.9	1.94	9738*
No	28.3	3.2	—12.7	3.97	10000*
Months before hospitalization					
00	20.8	8.3	—12.4	1.49	9319*
01-03	36.9	5.0	3.7	.74	7704
04-06	29.5	6.9	— 3.7	.54	7054
07-09	45.0	11.1	11.8	1.06	8554
10-14	25.0	8.2	— 8.2	1.00	8413
15-19	38.5	13.5	5.3	.39	6517
20-29	33.3	11.1	.1	.01	5040
30-39	42.8	10.1	9.6	.95	8290
40-up	29.4	11.0	— 3.8	.35	6368
Gradual, unknown	30.9	7.1	— 2.3	.32	6255
Behavior (suicidal, etc.)					
None	40.0	6.6	6.8	1.03	8485
1. Suicidal	27.2	6.7	— 6.0	.90	8159
2. Homicidal	30.4	6.8	— 2.8	.41	6591
3. Violent	29.7	7.5	— 3.5	.47	6808
4. Destructive	11.1	10.5	—22.1	2.10	9821*
Items 1 and 2	52.3	10.9	19.1	1.75	9599*
Items 1, and 3 or 4	31.3	11.6	— 1.9	.16	5636
Items 2, and 3 or 4	29.6	8.8	— 3.6	.41	6591
Items 3 and 4 only	26.6	11.4	— 5.6	.49	6879
All four items, or "yes"	36.7	6.9	3.5	.51	6950

TABLE 3 (*continued*)

RELIABILITY OF THE PERCENTAGE OF PATIENTS IN THE FOURTH OUTCOME-ON-FURLOUGH CATEGORY, BY ALL SUBCLASSIFICATIONS

Factors and subclassifications	Per[a] cents	Sigma %	Diff. (—33.2)	x / sigma	Chances[b] 10,000
Hallucinations					
None	28.2	4.0	— 5.0	1.25	8944
Noises	29.4	7.8	— 3.8	.49	6879
Voices	36.0	9.6	2.8	.29	6141
(Odors)					
Two of above	48.0	10.0	14.8	1.48	9306*
Three of above	37.1	4.7	3.9	.83	7967
Informant's relationship					
None; unknown	00.0	....	—33.2	....	10000*
Mother	33.3	7.0	.1	.01	5040
Father	33.7	4.9	.5	.10	5398
Siblings	28.6	6.0	— 4.6	.77	7794
Spouse	40.3	5.7	7.1	1.25	8944
Children	25.0	21.7	— 8.2	.38	6480
Officials	54.5	15.9	21.3	1.34	9099*
Distant relatives	23.1	8.2	—10.1	1.23	8907
Neighbors	28.6	17.1	— 4.6	.27	6064

*Items included in the scale.

[a]The percentage of patients in each subclassification which fell in the fourth outcome-on-furlough category.

[b]The chances in 10,000 that the given percentage would be actually greater or less than 33.2 per cent, on subsequent samples.

remission) in each subclassification. The data in the first major factor analyzed in this table will be recognized as the data presented in Table 2, which was used to illustrate the procedure followed. The sigma of the percentage of cases in the fourth outcome-on-furlough category in each subclassification of each major factor was divided into the difference between the obtained percentage and 33.2 per cent, the average percentage of cases in the fourth category for the total sample. This difference divided by the sigma of the given percentage gave the ratio for computing the chances in 10,000 that the obtained percentage in any subclassification was actually greater or less than the average expectancy.

Table 4 presents the 30 items included in both scales on the basis of the "reliability" of the percentages. It should be noted that no attempt was made to "explain" or justify the different weights assigned to the various scale items, which were empirically selected according to the objective procedures outlined above.

TABLE 4

SCORE POINTS ASSIGNED TO THE VARIOUS SUBCLASSIFICATIONS OF THE MAJOR FACTORS INCLUDED IN THE WEIGHTED SCALE

Condition on furlough		*Ability to learn*	
Restored	17	No schooling	—21
Unimproved	— 9	*Temperament as a child*	
First admission to furlough		Mixed classification	—15
00-09 months	16	*Disposition before insane*	
10-19	— 8	Sociable	11
20-29	—12	Distant, unknown	— 9
40-49	—12	*Number of abnormal relatives*	
50-59	—24	Three and above	—12
60-up	—28	*Months before hospitalization*	
Age on first admission		00	—12
40-49	10	*Behavior (suicidal, etc.)*	
Civil status		Destructive	—22
Widowed	—20	Suicidal *and* homicidal	19
Present occupation		*Dangerous with fire*	
Domestic	9	Yes	9
Student	—20	No	—13
Average intelligence		*Hallucinations*	
Below average	— 9	Two types	15
Success in business		*Informant's relationship*	
Successful	11	Unknown	—33
Unsuccessful	— 5	Official (cf., M.D.)	21
Time in school (years)			
00	—24		
13-15	13		

[a]The weights should be interpreted as follows: a patient furloughed in the category "restored" receives a score of 17; one furloughed as "unimproved" receives a score of —9. Patients furloughed in any other subclassification of the major factor, "condition on furlough," would be scored zero on that factor.

Table 5 presents the contingency coefficients obtained between the four outcome-on-furlough categories and the scores obtained with the two samples, based on the weighted and the unweighted scales. Statistically reliable contingency coefficients of .545 and .521 were obtained with the working sample on the weighted and the unweighted scales, respectively. Statistically reliable coefficients of .502 and .520 were obtained with the weighted and unweighted scales on the validation sample. It is thus evident that the two scales have a marked predictive value for determining the actual outcome-on-furlough of a completely new series of furloughed dementia praecox patients. Scores on the combined sample (totaling 426 cases[3]) yielded

[3]One case was not scored because of lack of information regarding one category.

TABLE 5

CONTINGENCY COEFFICIENTS BETWEEN THE FOUR OUTCOME-ON-FURLOUGH CATEGORIES AND THE SCORES ON BOTH SCALES

Samples scored	Weighted scale	*PE*	Unweighted scale
Working sample	.545	.037	.521
Validation sample	.502	.065	.520
Combined samples	.474	.033	.459

C's of .474 and of .459 with the weighted and the unweighted scales. No statistically significant differences were found between the contingency coefficients for the two samples, nor for the two scales. A Pearsonian coefficient of .945 was obtained between the series of scores based on the weighted and unweighted scales.

All six of the *C*'s enumerated above were more than five times their probable errors. However, the coefficients were "checked" by reducing each contingency table to a four-by-four classification, after which the coefficient was computed and divided by .866, the maximum *C* obtainable with a four-by-four classification (4). Although these additional *C*'s did not constitute a correction, they showed that the obtained coefficients were not spuriously reliable due to an irregular distribution of cases in the larger contingency tables. No significant differences were obtained between the original coefficients and the "checked" coefficients.

The weighted scale was judged to be slightly superior to the unweighted scale, both in terms of the contingency coefficients and in terms of an examination of the expectancy rates based on the two scales. The curve of the decreasing "chances in 100" of non-readmission paralleling the decrease in score values (category four) was more consistent with the weighted than with the unweighted scale.

Table 6, which presents the distribution of the four outcome-on-furlough categories and the weighted scores of the combined samples, yielded a *C* of .474. Since the contingency coefficient is only a generalized statement of the predictive value of the scale throughout the entire range of scores, it is evident that the scores within certain ranges may have higher or lower predictive value than do scores within other ranges. An analysis of Table 6 shows that the main differentiation occurred between the first and the fourth outcome-

TABLE 6

EXPERIENCE AND EXPECTANCY RATES BASED ON THE COMBINED SAMPLES, SCORED WITH THE WEIGHTED SCALE

Score	Still in the hospital			Returned, remission later		Still out, previous failures		Still out, first remission			Total	
	N	%	*S*[a]	*N*	%	*N*	%	*N*	%	*S*[a]	*N*	%
50-up	4	31	..	1	08	0	00	8	61	..	13	100
40-49	1	08	16	1	08	0	00	10	84	76	12	100
30-39	3	11	18	2	08	0	00	21	81	77	26	100
20-29	8	28	25	2	07	0	00	19	65	64	29	100
10-19	14	31	34	9	20	1	02	21	47	49	45	100
00-09	20	39	35	10	20	3	06	18	35	36	51	100
—01-09	19	35	42	16	29	5	09	15	27	29	55	100
—10-19	30	53	45	11	19	1	02	15	26	25	57	100
—20-29	18	48	54	7	18	5	13	8	21	20	38	100
—30-39	26	62	58	4	10	6	14	6	14	13	42	100
—40-49	14	70	63	1	05	4	20	1	05	11	20	100
—50-59	9	55	83	2	13	3	19	2	13	07	16	100
—60—	15	68	..	3	14	3	14	1	04	..	22	100
Total	181	43	43	69	16	31	07	145	34	34	426	100

[a]Percentages smoothed by a moving average of threes, computed from the numbers. The smoothed "chances in 100" for readmission or non-readmission in groups one and four represent the best "norms" for the weighted scale.

on-furlough categories (the "least successful" and the "most successful" groups, respectively). The "best guess" for readmission in the "least successful" group, was 43 chances in 100. On the basis of the scores, however, the smoothed expectancy rates for readmission ranged from 16 chances in 100 at the highest end of the scale to 83 chances in 100 at the lowest end of the scale.

The "best guess" for non-readmission (after initial furlough) was 34 chances in 100. On the basis of the scores, however, the smoothed expectancy rates for "non-readmission following first remission" ranged from 76 chances in 100 at the highest end of the scale to 7 chances in 100 at the lowest end of the scale.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Several major conclusions from the study were as follows:

1. The readmission or non-readmission of dementia praecox patients furloughed from the Milledgeville State Hospital may be predicted with a degree of accuracy significantly greater than chance.

2. The scales presented in the study have significant predictive value, and consequently would be useful if applied as instruments to facilitate the movement of the hospital population, or as instruments of research. Furthermore, the predictive value of the scales far exceeds the predictive value of psychiatric judgment relative to the patients' "condition on furlough."

3. The scale with the weighted scores has a slightly superior discriminative capacity than has the scale with the unweighted scores.

4. The influence of items individually showing little discriminative value may have significant predictive value if used in combinations.

B. Hypotheses

Several tentative generalizations and hypotheses were suggested by the study, as follows:

1. The techniques of prediction utilized in this study of the readmission or non-readmission of dementia praecox patients may be applied to the prediction of the readmission or non-readmission of patients with other mental disorders.

2. The discriminative capacity of the scales presented in this study can be improved through additional research, centering largely around (*a*) the inclusion of a larger number of scale items, and (*b*) the construction of separate scales for each sex.

3. The techniques of prediction utilized in this study might be applied to the construction of scales for negro patients.

4. The scales might have a relationship to criteria of prognosis other than the readmission or non-readmission of dementia praecox patients.

5. The scales might not have the same discriminative capacity in other regions nor in other mental hospitals, since the divergence of results presumably would depend upon local socio-economic patterns and local hospital facilities.

6. The technique of prediction might be applied to fields other than those mentioned in this study—for example, in predicting scholastic success on the basis of discrete data.

C. Recommendations

On the basis of the conclusions and the hypotheses enumerated above, certain pertinent recommendations have been formulated, as follows: (*a*) the extension of the existing scales by the inclusion of additional items, based on larger numbers of patients; (*b*) the construction of separate scales for each sex; (*c*) the construction of scales for negro patients; (*d*) the construction of scales for predicting the readmission or non-readmission of patients with other mental diseases, by race, and by sex; (*e*) further study of the scales in the light of other criteria of prognosis, such as the adjustment of patients remaining in the community.

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SIGNIFICANT CHARACTERISTICS OF PRESCHOOL CHILDREN AS LOCATED IN THE CONRAD INVENTORY*

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Acknowledgment 457

I. Introduction 459

II. Procedure 461

III. Results 463

IV. Summary 469

Appendix 471

References 487

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I. INTRODUCTION

In working with children, both teachers and clinicians are frequently faced with the problem of obtaining from others information concerning the personality and behavior of their cases. A convenient device in this connection is the behavior rating scale. If significant items are included in the scale, if the items are clearly defined, and if the ratings are made by a number of competent judges, the behavior rating scale has its definite place in any program of data-collection.

The primary purpose of the present study was to reduce Conrad's (3) lengthy *California Behavior Inventory for Nursery School Children,* by selecting from the 231 items of this Inventory only those which might have *most significance* in revealing the child's general adjustment or personality make-up. In addition, we have attempted to throw some light on the reliability and validity of the shortened scale.

The *California Behavior Inventory for Nursery School Children* has been applied for several years in the Purdue University Nursery School, both in teaching and in research. This Inventory has the advantage of being designed particularly for use with nursery school children; the items are observable in nursery school situations; the Inventory is comprehensive and specific; the items are well-defined; a fairly satisfactory reliability and validity have been established (2, 4). The Behavior Inventory consists of 133 major headings, with sub-headings making a total of 231 items of behavior to be rated on a seven-point scale. The two extremes and the middle point are defined for each item (for illustrations, see the Appendix of this paper).

A chief and obvious disadvantage of the California Behavior Inventory is its great length. The task of rating each child on each of 231 items is too burdensome to permit widespread use of the Inventory, except possibly for special research. In establishing the reliability of the Behavior Inventory, Conrad himself had recourse to a "fair sample" of traits picked more or less at random from the total scale (4). The first task of the present study was, therefore, to determine which items of Conrad's complete Inventory could be regarded as among the most significant.

II. PROCEDURE

From the total of 231 items in the Conrad Inventory a preliminary selection was made to include those items which (in substance) appear also in various behavior rating scales for use with problem children. The scales used were those compiled by Olson (6) and by Baker and Traphagen (1), as well as a list of behavior traits reported by Fitz-Simons (5) from clinic cases, and a list of significant behavior traits compiled by Dr. Harriet E. O'Shea and the writer. A further selection was made by eliminating those items which appeared in only one list, or which closely resembled or were included under other items (e.g., "Nervous Laughter," omitted in favor of the item "Nervous Habits"). This preliminary selection resulted in a scale of 129 items from the original 231.

These selected traits with their complete descriptions copied from the Conrad Inventory were sent to 55 psychiatrists, psychologists, psychiatric social workers, and nursery school teachers, with a letter asking their coöperation according to the following directions:

> Please check each trait below with both of the following questions in mind:
>
> *a.* How important is it to consider this behavior in studying the child?
>
> *b.* Does the trait reveal significant aspects of the child's behavior: general adjustment, emotional adjustment, personality make-up, etc.?
>
> Indicate your judgment by an "*x*" in the column under the heading *Check Significance*. The levels of significance are numbered as follows:
>
> 1. Extremely significant.
> 2. Significant—should be included in any case study.
> 1. Fairly significant.
> 0. Omit—of no special significance.
>
> *EXAMPLE*
>
> An example is given below of the trait "Consolability." Note that each trait is named and also that the two extremes and the middle level of the trait are described. A judge who considers the trait "Consolability" of no special significance, who feels that the study of this trait does not reveal significant aspects of the child's behavior, will place an "*x*" in front of the "*0*" in the column marked *Check Significance*.

The names of the judges were selected by the writer, with the assistance of Dr. Harriet E. O'Shea and other advisors, from membership lists of the American Psychological Association (clinical psychologists),[1] the American Orthopsychiatric Association, the American Association of Psychiatric Social Workers, and the National Association for Nursery Education.

[1]This study was undertaken before membership lists of the American Association for Applied Psychology were available.

III. RESULTS

A. The Abbreviated Inventory

Twenty-six blanks were returned checked by five psychiatrists, fourteen psychologists, two psychiatric social workers, and five nursery school teachers. The number of judges was perhaps small, but it was felt that in this field the judgment of a few highly trained, experienced individuals had more value than that of a much larger number of less trained and experienced people.

In order to include all significant items while still reducing the length of the scale, a criterion for selection on the basis of these 26 judgments was established as follows: an item was selected when 75 per cent or 19 of the 26 judges checked it as *three* ("extremely significant") or as *two* ("significant enough to be included in any case study"). Some exceptions were made in cases in which 18 of the judges checked a trait at levels three or two and a 19th judge marked it at zero, adding the word "duplicate," indicating that it duplicated an item previously marked. In two cases two traits were combined into one, the combination having been suggested on several of the blanks. In four cases a trait was retained although it was checked at three or two by only 16, 17, or 18 judges, because it was checked at three by four of the five psychiatrists, and because it did not appear to be covered under any of the other traits retained.

The scale which resulted from the selection described above contained 67 of the 129 items of behavior on the lists sent out to the judges. *These 67 items form an abbreviated scale of traits which are judged by clinicians and teachers to reveal significant aspects of a child's behavior.* Conrad (2) has shown that agreement between judges is likely to be best on significant or outstanding traits; the abbreviated Inventory may, therefore, possess the advantage not only of greater economy of time and effort, but also of greater reliability and validity than the original scale. The ratability of a trait, however, may not be exactly the same thing as its significance.

The titles of the selected traits are listed below. The number *in parentheses following each trait is the number of the trait in* the original Conrad Inventory (3).

1. Popularity (60).
2. Talking to others (social participation) (105.41).

3. Friendliness to other children (52.1).
4. Friendliness to adults (52.2).
5. Social inclinations toward individual children (104.1).
6. Social inclinations toward a group (104.2).
7. Companions in activities (social participation) (105.42).
8. Sense of responsibility for the group of which he is a part (94.3).
9. Sense of responsibility in play and social reactions (94.2).
10. Group coöperation (44.3).
11. Self-reliance with respect to adults (49.1).
12. Self-sufficiency (45).
13. Number of interests (101).
14. Curiosity (122).
15. Sustained effort in an occupation (110.2).
16. Active persistence of interests or occupation (108).
17. Ambition (121).
18. Speed of decision (116.1).
19. Finality of decision (116.2).
20. Behavior response to difficulty (18).
21. Recovery from emotional disturbance (11).
22. Adjustability to new situations (51).
23. Enthusiasm (40.1).
24. Happiness, cheerfulness; good-humor, agreeableness (40.2, 40.3).
25. Desire for affection (59.1).
26. Affectionateness to adults and to children (59.21, 59.22).
27. Behavior reaction to sympathy or approval (25.1).
28. Compliance with respect to suggestions from adults (46.71)
29. Compliance with respect to suggestions from children (46.72).
30. Compliance in regime (44.4).
31. Reaction to social pressure (17).
32. Reaction to teasing (21).
33. Rights (self assertion) (46.2).
34. Attempts at leadership in group (62.1).
35. General statement of inhibition of emotions (8.1).
36. Ease with which the child is emotionally affected (9.1).
37. Degree of emotional response (9.2).
38. Restlessness (5).
39. Inspection of hurts (82.5).
40. Dependence on outside suggestion and direction (48.2).
41. Suspiciousness of people (71).
42. Apprehensiveness (88).

43. Fear in response to bullying, threatening commands, etc. (90.1).
44. Fear in non-social situations (90.2).
45. Elaboration or indirectness of response to fear (13).
46. Elaboration or indirectness of response to failure or frustration (14).
47. Behavior reaction to defeat (20.4).
48. Response when thwarted by other children (19.2).
49. Response when thwarted by an adult (19.3).
50. Bossiness in a group or with individual playmates (62.3, 63.3).
51. Boastfulness (69).
52. Fault finding (46.6).
53. Blaming of others (15).
54. Bullying (79).
55. Ruthlessness, lack of kindness and consideration for others (44.2).
56. Irritability (72).
57. Quarrelsomeness (80).
58. Ease of stimulation of anger (other than anger displayed in temper tantrums, when child is dealing with adults) (74.1).
59. Attacking others (35.2).
60. Delayed retaliation (revenge) (47.2).
61. Circuitous ("compensatory") retaliation, continuing and largely indiscriminate (47.32).
62. Proneness to antipathies (intense, lasting hatred) (57.3).
63. Jealousy of partiality to another child (77.1).
64. Nervous habits (65).
65. Stammering (67).
66. Special peculiarity of child's usual facial expression (126).
67. Sulking (76).

According to the classifications adopted by Conrad (3) in the original Inventory, the abbreviated Inventory contains one item under *Gross, Overt Activity* (viz., the item "Restlessness"); seven items under *General Emotional Traits* (e.g., the item "Degree of Emotional Response"); eight items under *Reaction to Various Forms of Motivation* (e.g., "Behavior Response to Difficulty"); thirty-nine items under *Specific Emotional Traits* (e.g., "Friendliness to Children"); eleven items under *Interests and Occupations* (e.g., "Number of Interests"); and one item referring to *Facial Expression.*

A complete description of each of the 67 selected items of the abbreviated Inventory is given in the Appendix.

B. Application of the Abbreviated Inventory

The abbreviated Inventory was applied in the Purdue University Nursery School, in the 4- to 5-year-old group. Ratings were available from six teachers (either regular staff members or graduate students) who had known the children for at least one semester. Eight children of the group were well enough known to be rated by all the judges on each of the 67 traits of the abbreviated Inventory. The judges had had preliminary training in using the scale and were asked to follow the instructions given by Conrad in his monograph (3).

For 28 of the 67 traits,[2] the average range[3] or scatter of judgments of the six judges in rating a child on the seven-point scale was two intervals or less. An average range of two intervals or less is taken to indicate general agreement among the six judges. The 28 traits in this list include behavior which is "overt," to which the teacher's attention is most likely to be drawn (for example, "restlessness," "retaliation," "degree of emotional arousal," etc.; "compliance with suggestions of adults" is judged with more agreement than "compliance with suggestions from other children").

For 24 traits[4] the average range of judgments on a trait was over two but less than 2⅚ intervals. Again, items to which the teacher's attention is most likely to be directed are judged with the most agreement. If one calculates for each trait the per cent of times that the judgments fell outside the range of two intervals,

[2]The 28 traits, as numbered in the Appendix of the present paper, are 1, 5, 6, 15, 17, 20, 26 (a combination of Conrad's 59.21 and 59.22), 28, 29, 30, 34, 36, 37, 38, 39, 43, 45, 46, 47, 51, 55, 60, 61, 62, 64, 65, 66, 67.

[3]The "average range" in scatter of judgments on a trait was calculated thus: the ratings given to one child on a trait by the several judges were inspected and the range of ratings for that child noted, the range being the distance from the lowest rating given him by any judge to the highest rating given him by any judge on that one trait. The distance was expressed in terms of the number of intervals on the seven-point scale from the rating of the lowest judge to the rating of the highest judge. When the range of judges' ratings had been found for each child on a given trait, the average of those ranges was calculated for the trait in question and this average was called the average range.

[4]The 24 traits, as numbered in the Appendix of the present paper, are 3, 4, 7, 9, 10, 12, 13, 14, 16, 22, 25, 27, 31, 33, 42, 48, 49, 50, 52, 53, 54, 56, 58, and 59.

one finds that such an item as "friendliness to adults" is judged with more agreement (6% error) than "friendliness to children" (10% error); "response to thwarting by adults" is judged with more agreement than "response to thwarting by children"; etc. Unless it is dismissed as a fluctuation of sampling, the relatively high error in judging "bullying" (15% error) raises the question whether this trait is hard for teachers to estimate because it is usually children and not teachers who are bullied.

For *five* traits (Nos. 18, 23, 35, 41, and 63) the average range in judgments was 2⅝ intervals. This group contains items which are less overt (such as "self sufficiency"), or which may affect the teacher's activities less (such as "number of interests"). For *four* traits [Nos. 24 (a combination of Conrad's 40.2 and 40.3), 40, 44, and 47], the average range in judgments was 2¾ intervals; and for the remaining six traits (Nos. 2, 11, 19, 21, 23, and 24) the range was three intervals or more, indicating that these traits were difficult for these judges to rate. Possibly one source of disagreement on these "difficult" traits is that the child's reactions differ with different adults; for example, in the trait "self reliance with respect to adults" the child may be self reliant when with one adult, but dependent when with another—a matter which needs more accurate measurement. A judge may rate a child according as the child responds to the rater himself, or as the child responds to others also.

Such a summary suggests that in using a rating device to obtain estimates of significant personality characteristics, one needs to consider the observability of the trait and the possible biases in judges' points of view when rating various items. It might suggest the need for training raters to watch more carefully for the less easily observable traits. A rating scale may thus have value not only for understanding individual children and checking their progress or change in behavior, but as a *training instrument* for the inexperienced teacher or worker. Comparing ratings may reveal consistent biases or areas of personality in which one rater deviates from the group-judgment, perhaps due to lack of understanding or lack of awareness on the part of that individual rater.

IV. SUMMARY

The aim of the present study was primarily to overcome the chief practical disadvantage of the *California Behavior Inventory for Nursery School Children.* This Inventory, devised by H. S. Conrad, consists of 231 items to be rated on a seven-point scale. For practical use, so long an Inventory requires much abbreviation. Our first step in the process of abbreviation was to select, from the original 231 items, 129 items which (in substance) appear also in several behavior rating scales for problem children and in various lists of significant traits. These 129 traits and their complete descriptions as given in the Conrad Inventory were then sent to 55 experienced clinicians and nursery school teachers, with a request for their coöperation in checking each trait as to its level of significance in the behavior of a child. From the 26 usable blanks returned, those items were selected which were checked at the first two significance-levels ("Extremely significant" or "Significant enough to be included in any case study of a child") by 19 or 75 per cent of the judges. The resulting abbreviated Inventory consists of 67 items judged to indicate significant aspects of a child's behavior. The abbreviated Inventory is presented in the Appendix of the present paper.[5]

When the abbreviated Inventory was used by six judges to rate eight four-year-old children in a group at the Purdue University Nursery School, its value was indicated not only for understanding individual children and appraising their progress or change in behavior, but also as a training instrument for inexperienced teachers. The abbreviated Inventory seems to be of value as a convenient and reliable instrument both for measuring individual children, and for exploring the awareness of individual teachers to important personality characteristics.

[5]Separate copies of the Appendix, containing the abbreviated *California Behavior Inventory for Nursery School Children* may be obtained by writing directly to the author.

APPENDIX

Items Included in the Revision of the California Behavior Inventory

The following directions and selected trait-descriptions, constituting the abbreviated form of the original *California Behavior Inventory for Nursery School Children,* are taken, with permission, from the original *Inventory* (now out of print) (3).

1. *Directions*

The Behavior Inventory consists of a list of numbered traits. Each trait in the Inventory has been described: (*a*) by a suggestive heading; and (*b*) by an elaboration or illustration of the heading; in this elaboration the *two extremes* of the trait are rather fully illustrated and defined, and the middle or *average* of the trait is usually stated somewhat more briefly.

Please give all children a rating for each trait, on a seven-point scale. Rate all the children *for each individual trait,* before proceeding to the next trait. . . . When rating, please take the child's chronological age into consideration. Each child should be rated only *in comparison with others of the same chronological age.*

The symbols to be used in rating are as follows:

"1": Child is *extreme and outstanding,* in the manner indicated in the *upper* third of the description of the trait (may be thought of as ++!).

"2": Child is *noticeably exceptional,* in the direction indicated by the *upper* third of the description of the trait (may be thought of as ++).

"3": Child *differs from the average for his age,* leaning in the direction indicated by the *upper* third of the description of the trait (may be thought of as +).

"4": *Average* for the child's age (may be thought of as 0 or ±).

"5": Child *differs from the average for his age,* leaning in the direction indicated by the *lower* third of the description of the trait (may be thought of as —).

"6": Child is noticeably exceptional, in the direction indicated by the *lower* third of the description of the trait (may be thought of as ——).

"7": Child is *extreme and outstanding,* in the manner indi-

cated in the *lower* third of the description of the trait (may be thought of as ——!).

Use some such rating sheet for each trait as follows:

Trait No. —— Title ———— Date —— Rater. ——

Name of Child	Age	Levels of Trait 1	2	3	4	5	6	7

2. *Descriptions of Traits*

1. *Popularity:*

1. Child is a favorite with the other children; other children like especially to have the child as a playmate, or as a member in group-activities.

4. Average popularity; better liked by some children than by others.

7. Child is unpopular; other children seldom choose him as a playmate and do not care to have him as a member in group-activities.

2. *Talking to Others* (social participation):

1. Talks to others freely, fully, and frankly; indisposed to keep secrets; talks spontaneously and uncritically to everyone.

4. Average. Talks fairly freely to his friends; talks considerably less to others.

7. Not inclined to speak unless spoken to; brief, secretive.

3. *Friendliness to other children:*

1. Shows an open friendliness to every one; quick to make clearly friendly approaches; does more than meet the other child half-way.

4. Average. Friendliness depends somewhat upon mood, need for a playmate, the approaches of the other child, etc.

7. Stands off; is either uninterested in others, or suspicious, antagonistic, bashful, sullen, etc.

4. *Friendliness to adults:*

1. Shows an open friendliness; quick to make clearly friendly approaches; shows a prompt willingness to become friendly.

4. Average. Friendliness depends somewhat on mood, presence of mother, the approaches of the adult, etc.

7. Stands off; is either uninterested, or suspicious, antagonistic, bashful, etc.

5. *Social inclinations toward individual children:*

1. Child manifests strong desire to join or to welcome a playmate, rather than play by himself. (Disregard whether the child actually joins and plays with the other child, or not.)

4. Average social inclinations. More often likes to play with another than by himself.

7. *Disinclined to join another playmate. Seclusive, or else* prefers to play in a group rather than with an individual.

6. *Social inclinations toward a group:*

1. Strongly inclined to join in group play or activity—as shown, perhaps, by child's very frequent participation in the play of the group; or by hanging around, on-looking, interfering (as a means of gaining entree), picking a quarrel with a member of the group (as a means of gaining entree), etc.

4. Normal inclination to join group activity. Desire to join the group depends on the children who constitute the group, and the nature of their activity.

7. Disinclined to join group activity; seclusive, or else prefers to play with individual playmates.

7. *Companions in activities* (social participation):

1. Child's activities are highly social, always involving a playmate or a group.

4. Average. Plays by self, as well as with others.

7. *Child's activities are characteristically asocial.* Plays and works by self.

8. *Sense of responsibility for the group of which he is a part:*

1. Sense of responsibility extends to the group of which the child is a part. Notices whether group is misbehaving, seems exceptionally aware and concerned about the consequences of such misbehavior (concern expressed by lagging behind, raising a dissenting voice, etc.). Similarly, is quick *to notice whether group is in danger of accident or unpleasantness,* and calls attention to this.

4. Average. *Child's sense of responsibility for his group* is weaker than for himself.

7. Child has little or no sense of responsibility for his group. Concurs in group's misbehaving, taking of risks, defying *of rules and custom, etc., with apparently complete ignorance* or unconcern about consequences.

9. *Sense of responsibility in play and social reactions:*

1. Child is exceptionally considerate of the consequences of what he does in his play, and in his social engagements; e.g., will never put the yellow paint-brush into the red paint; will not push a child from even a slightly dangerous place (e.g.,

from a step); will not let a heavy barrel which he is playing with, roll about the yard without control; will not throw a heavy object at another child, even when the object is very handy and he is very angry; etc.

4. Average. Occasionally irresponsible about less important things (e.g., will push a child from one step, or perhaps even two low steps); more likely to be somewhat rash or irresponsible when angry, tired, irritated; etc.

7. Recklessly irresponsible and inconsiderate of consequences of his actions; e.g., will quite composedly and perhaps good-naturedly "pat" a playmate on the head with a heavy board; will push a child down several steps in order to get him out of the way; when angry, will throw heavy objects at a child's face; etc.

10. *Group coöperation:*

1. Excellent in group-coöperation and team-play; is either a competent and well-liked leader, or an actively interested and wholly coöperating member of the group. Is willing to make considerable sacrifice in order to further the group-aim.

4. Average. Child is interested in the group-effort, and will participate normally so long as he is not asked to make a considerable sacrifice (such as doing something very menial for the group—e.g., bringing in dirt so the others can make a long line of mud pies; or foregoing his accustomed leadership etc.).

7. Poor in group-coöperation and team-play; child is either self-willed, indomitably "bossy" or insufficiently interested in the group aim to make a good social member.

11. *Self-reliance with respect to adults:*

1. Exceptionally self-reliant; rarely asks adults for assistance, protection, or advice; rarely asks for information which he can discover by himself. Child accepts assistance from adults only if convinced by previous failure that he needs or can profit by it; accepts advice only if convinced that it is in accord with his own desires or ideas.

4. Average. Child asks adults for advice and help when confronted with a considerable difficulty or obstacle; asks for assistance and protection more often when tired, or when especially harassed.

7. Exceptionally dependent on adults. Continually making bona fide requests for help, protection, information, advice, or moral support; very ready to accept assistance or advice. (Do not confuse requests which are designed mainly as bids for attention, with genuine request for help, information, etc.).

12. *Self-sufficiency:*

1. Child can play and work happily by self; can get along exceptionally well or exceptionally long without the company of others. Has resources within himself; can be self-sufficient.

4. Average. Can enjoy playing and working by self for a while, but soon prefers to play with a companion or a group (as evidenced by slackening of the solitary activity, looking around and watching others, etc.).

7. Child requires company of other children or adults; cannot play and work happily by himself. Apparently lacks resources within himself; socially dependent.

13. *Number of interests:*

1. Has many interests or favorite occupations.

4. Average. Has as many interests as most of the others his age.

7. Has only a few interests; limited to a single favorite activity, or to inactivity.

14. *Curiosity:*

1. Child is keenly curious. Asks many questions for information about things, persons, etc. (Do not confuse a bid for attention, with questions prompted by genuine curiosity); explores, investigates, tries things out, etc.

4. Average. Tries to find out the principal points about the strange and the new (through questions or through his own investigation); but does not exhibit curiosity concerning the many aspects of the old.

7. Child conspicuously lacks curiosity; fails to ask questions, investigate, explore, try things out, or otherwise show interest in even the strange and the new. Child is either dully indifferent, or too timid or backward in his interests.

15. *Sustained effort in an occupation:*

1. Child is capable of exceptionally sustained effort, even in a difficult and arduous task or game.

4. Average maintenance of level of effort. Effort is better maintained where progress is fairly prompt and visible.

7. Incapable of sustained effort. Effort quickly flags and deteriorates. Child leaves his work or play unfinished.

16. *Active persistence of interests or occupation:*

1. Interest in an occupation is actively persistent, tenacious, firm, reliable.

4. Average. Interest in an occupation declines after a while. Interest declines more rapidly when obstinate difficulty is encountered.

7. Interest dwindles readily. Child is very easily diverted, lacks persistence.

17. *Ambition:*

1. Child is ambitious in its undertakings. Is willing to try things that are hard to do; piles blocks exceptionally high, etc.

4. Average. Is fairly moderate in his undertakings and efforts.

7. Child is exceptionally unambitious. Characteristically undertakes only what is easy; is satisfied with a low pile of blocks, a half-filled wagon, a very moderate speed in pulling his express-wagon, etc.

18. *Speed of decision:*

1. Child makes decisions and choices exceptionally quickly.

Never inactive through lack of prompt decision as to what to do, whom to address, etc.

4. Average speed of decision. Decides or chooses quickly in simple or familiar situations.

7. Child is exceptionally slow in deciding or choosing; takes a long time to come to a decision; child is either deliberative, or irresolute.

19. *Finality of decision:*

1. Once the decision or choice is made, the child abides by it firmly and reliably. Does not change his mind, stop to try out the alternative, etc.

4. Average. Child abides more firmly by his decisions or choices when they appear to be turning out favorably, than otherwise; occasionally drops a satisfactory choice to try out the alternatives.

7. Child cannot really make up his mind; makes one choice, turns to another, then another, etc. Fluctuates from one decision to another; greatly lacks firmness or finality of decision.

20 *Behavior response to difficulty:*

1. Child tends to persist steadfastly, with undiminished energy, despite great difficulty or failure. Undiscriminatingly pertinacious.

4. Average. Persists if the difficulty yields fairly promptly to his attempts; otherwise effort flags and child quits.

7. Child falters quickly at difficulty, and quits too readily. Requires much encouragement to persist.

21. *Recovery from emotional disturbance:*

1. After the immediate emotional response the child behaves in its normal manner; no "after effects" of the emotion such as unusual silence, inactivity, seclusion, showing off, pouting, brooding, irritability, etc. Child is exceptionally resilient, recovers very quickly.

4. Average resilience.

7. Lack of resilience. Child tends to remain (inwardly) in a persistently disturbed state; the immediate emotion brings an aftermath of disturbance in behavior (such as unusual silence, inactivity, seclusion, showing off, pouting, brooding, resentment, irritability, etc.). Internal emotion evidently continues, after the emotional situation and the immedinte emotional reaction have passed.

22. *Adjustibility to new situations:*

1. Child welcomes changes and new situations; is venturesome, exploring; enjoys novelty of a situation.

4. Average. Welcomes varintions or small changes from the familiar, rather than genuinely new situations which he may not be prepared to meet.

7. Not at all venturesome; shrinks from making new ad-

justments; greatly prefers the habitual and familiar to the stress of reorganization required by the new. Routinated.

23. *Enthusiasm:*

1. Enthusiastic, easily excited to active, energetic participation.

4. Average. Normally enthusiastic when the situation is suitably stimulating.

7. Difficult to stir to energetic, enthusiastic participation. Child is either phlegmatic, inhibited, or lazy.

24. *Happiness, cheerfulness; good-humor, agreeableness:*

1. Merry, happy, cheerful; exceptionally good-natured, good-humored, agreeable, amiable.

4. Average. Less happy and cheerful when tired. More easily becomes cross when tired than when fresh and well.

7. Morose, depressed, discontented; cross, peevish, fretful, ill-humored.

25. *Desire for affection:*

1. Child is exceptionally fond of affection; comes up to be petted, is glad to have other children or adults pat his head, or put their arms around him, etc.

4. Average. Enjoys occasional caresses, but does not especially solicit or encourage them.

7. Child is exceptionally indifferent or averse to affection; tends to withdraw from petting.

26. *Affectionateness to adults and to children:*

1. Is frequently seen "loving" adults and other children; e.g., hugging adult's knees, cuddling close to an adult while sitting, putting arm around adult's neck, etc. By placing arm around other child, hugging, sitting close together, etc. [Try *not to confuse affectionateness with a bid for attention, or an* attempt to tease or annoy (as a sudden, unexpected hug).]

4. Average. Occasionally hugs his preferred nursery teacher or his favored playmates when he feels good, has little else to do, or has just succeeded in a difficult joint enterprise, etc.

7. Displays no signs of overt affection toward others, adults or children.

27. *Behavior reaction to sympathy or approval:*

1. Child is strongly stimulated to greater or more persistent effort by sympathy or approval; sympathy and approval serve exceptionally efficiently as a means of motivating the child's behavior.

4. Average. Sympathy and approval serve with average efficiency; *will not prevent child from quitting a very difficult task, or* induce him to do what he strongly dislikes.

7. Ineffectual. Sympathy and approval fail to alter the child's behavior.

28. *Compliance with respect to suggestions from adults:*

1. Extremely suggestible; accepts suggestions undiscriminatingly, without resistance.

4. Average. Suggestions are accepted or rejected according to their estimated utility, and according to the person from whom the suggestion comes.

7. Negativistic, resists suggestions persistently and undiscriminatingly.

29. *Compliance with respect to suggestion from children:*

1. Extremely suggestible; accepts suggestions undiscriminatingly, without resistance.

4. Average. Suggestions are accepted or rejected according to their estimated utility, and according to the child from whom the suggestion comes.

7. Negativistic, resists suggestions persistently and undiscriminatingly.

30. *Compliance in regime:*

1. Coöperates very readily in regime, conforms implicitly to established aims and standards, obeys the rules.

4. Average coöperation and obedience in regime.

7. Uncoöperative, individualistic, frequently violates the rules if they interfere with his purposes.

31. *Reaction to social pressure:*

1. Accedes immediately to the demands (explicit or implied) of the group. Keen social sensibility.

4. Average. Responds with moderate promptness to reasonable demands of the group; but resists or becomes indifferent to the group's demands if it expects him to serve as a butt of amusement, or perform disagreeable tasks, etc.

7. Indifferent or insensitive to the demands and expectations of the group; individualistic.

32. *Reaction to teasing:*

1. Very sensitive, easily hurt, reacts strongly.

4. Average. Is sensitive to teasing, but behavior is not especially disorganized unless many children join in the teasing at one time.

7. Indifferent; quickly becomes callously disregardful.

33. *Rights* (self assertion):

1. Insists on maintaining his rights; e.g., will not yield his place at painting, or at the carpentry bench, etc.; insists on getting his turn on the slide, or in group-games, etc. Child on the one hand insists on getting all that is due him, and on the other determinedly resists any encroachment on his own rights.

4. Average. Less insistent on some of his rights than others, but aware of what is due him, and ready to make some resistance to the majority of encroachments.

7. Child is exceptionally submissive and unassertive. Other children find they can, if they wish, encroach upon or neglect to consider his rights (at the carpentry bench, the slide, in group games, etc.). Other children find that they can impose on the child, can "walk over him."

34 *Attempts at leadership in group:*

1. Child tries habitually to serve as leader of the group; is continually trying to direct others in the group.

4. Average. Child tries occasionally to lead the group, but more often is content to be merely one of its several individual participants, or occasionally to make suggestions or offer indications, rather than to try to lead directly.

7. Submissive, a follower. Child does not try to lead, or offer suggestions. Relinquishes his own personality while in the group, becomes merely a cog in the wheel.

35. *General statement of inhibition of emotions:*

1. Child customarily tries to control and restrain his emotions. Very highly inhibited, emotionally.

4. Average control or restraint of emotions. Average overtness of expression of emotions.

7. No restraint of emotions. Reaction to emotional stimuli is prompt, frank, free. Child rarely attempts to restrain, control, conceal, or inhibit his emotions.

36. *Ease with which the child is emotionally affected:*

1. Child is very easily affected emotionally. Highly responsive, emotionally. Slight unexpected difficulty or success, little accidents, casual reproach, and in general relatively mildly stimulating situations, readily produce emotion in the child.

4. Child is average in respect to the ease or difficulty with which emotion can be aroused.

7. Child is very difficult to affect emotionally. Emotionally unresponsive. Exceptionally strong stimuli, and exceptionally pleasant (or unpleasant) situations are required in order to arouse emotion in the child.

37. *Degree of emotional response:*

1. Child's emotional response is customarily very strong. Child is intensely affected emotionally (whether he expresses his emotion openly and freely, or not).

4. Child's emotional responses are, in general, average in intensity.

7. Child's emotional response is characteristically small. Relatively strongly stimulating situations produce only mild or weak emotions in the child.

38. *Restlessness:*

1. Child cannot stand or sit still with self-possession; is exceptionally restless.

4. Average self-possession when standing, sitting, watching, etc.; average restlessness.

7. Child can stand or sit still with exceptional absence of childish restlessness.

39. *Inspection of hurts:*

1. Child takes his accidents and hurts very seriously; examines his body carefully to discover the scratches, looks for blood, becomes worried about a slight bruise, etc. Hypochondriac.

4. Average. Looks for blood after a hard fall, but does not get worried about a slight bruise.

7. Child neglects possibility of serious injury. Fails to notice scratches, blood, etc. "Doesn't know he's hurt until he can hardly move."

40. *Dependence on outside suggestion and direction:*

1. Child requires continuous outside suggestion and direction (from adults or other children) in order to choose an activity, or to select a method of overcoming an obstacle, etc. Finds it exceptionally difficult to get started and keep going "on his own hook." Lacks initiative.

4. Average initiative. Generally requires no suggestion or direction to get started; but if an unusual difficulty is encountered, the child is likely to be more or less at a loss, and require some outside suggestion or direction in order to do something about the obstacle or difficulty.

7. Child promptly and of own accord chooses the activity in which he is to engage, selects the method to be used in overcoming an obstacle, etc. Requires no outside suggestion or direction in order to get started and keep going. Has exceptional amount of initiative.

41. *Suspiciousness of people:*

1. Suspiciously careful before accepting a favor, or becoming friendly, or taking an adult or another child into his confidences, etc.

4. Average. Suspiciousness depends on presence or absence of mother, strangeness of the situation, etc. More suspicious about making friends with a new child than about accepting favors.

7. Trustful, naïve; accepts favors from strange persons, uncritically, is ready to become friendly at once, etc.

42. *Apprehensiveness:*

1. Anxious, frightened, or worries at the prospect of a situation which is new and unknown, unpleasant, or dangerous. E.g., child cries or is frightened at prospect of a physical examination, a vaccination, or a mental test; is scared at prospect of having to be away from familiar surroundings or from mother; is timid about making a new friend; etc.

4. Average. Becomes a little anxious, for example, while

waiting for a vaccination, but does not usually worry much in advance. Occasionally slightly apprehensive at prospect of the unfamiliar.

7. Child never worries or becomes frightened in advance; is entirely carefree and unapprehensive.

43. *Fear in response to bullying, threatening commands,* etc.:

1. Child is easily intimidated by bullying or threats, even from a child its own size or smaller. Cowardly.

4. Average. *Normal fear when resisting bullying from* a bigger child.

7. Child is fearless in resistance against bullying, threatening commands, etc., even from a bigger child. Cannot be intimidated. Courageous.

44. *Fear in non-social situations:*

1. Child is easily frightened; e.g., is uneasy when climbing, is afraid to ride in rapidly moving wagons, is easily frightened by large dogs, etc. Child whimpers or cries in response to situations involving relatively slight danger or possibility of accident; child is timid, afraid.

4. Average. Normal fear when in situations involving danger.

7. Child is very courageous, to the point of recklessness and foolhardiness. Becomes frightened only in exceptionally hazardous situations, or in response to extreme sudden stimuli.

45. *Elaboration or indirectness of response to fear:*

1. Reacts to fears by a relatively indirect (compensatory or "sublimated") response; e.g., by showing off in other directions; by bravado; or by other similar subterfuge designed to *conceal the fear from the child itself, and from others.*

4. Average. Occasionally resorts to indirect response or subterfuge. Average compensation or sublimation of fears.

7. Reacts to fears by a simple, frank, direct response. Child either cries, whimpers, etc., or else directly resists the fear. Does not resort to attempts at concealment or "sublimation" of response.

46. *Elaboration or Indirectness of response to failure or frustration:*

1. Reacts to frustrations by a relatively indirect (compensatory or "sublimated") response; *e.g.,* by the "sour grapes" reaction; by futile kicking (or otherwise attempting a mock-mastery) of the obstacle; by showing off in other directions; or by other similar subterfuges designed to conceal the failure or *frustration from himself and from others.*

4. Average. Occasionally resorts to indirect response or subterfuge. Average compensation or sublimation of failure and frustration.

7. Reacts to frustrations by a simple, direct, naïve response—viz., by a direct emotional outburst (such as crying),

or by frank surrender or submission to his failure. No attempt at concealment of the failure or frustration, either from self or others.

47. *Emotional reaction to defeat:*

1. Child is upset by losing in a competitive activity; that is to say, the child feels ashamed, or inferior, or angry, or becomes irritable, etc.; child tends to avoid his rival; may even cry.

4. Average. When defeated by a fairly small margin, the child is not upset; will continue to play with or compete with his rival; etc.

7. Responds to defeat without any apparent feelings of self-depreciation. Child admires his rival, watches him approvingly, attempts to emulate, etc.; tends to follow and hang around the superior, rather than avoid him; etc.

48. *Response when thwarted by other children:*

1. Emotional response is very marked. Child makes highly emotional effort to overcome the resistance or interference of the other child (or children); or yells, cries, etc.; or leaves the situation, sobbing or surcharged with inner emotion.

4. Average emotionality. Child becomes somewhat emotional at thwarting, especially if his earnest desire is blocked unexpectedly.

7. Emotional response is negligible. Child attempts to overcome the resistance or interference without any excitement; or else unemotionally stops this attempt and either obeys, compromises, or unemotionally leaves the situation.

49. *Response when thwarted by an adult:*

1. Emotional response is very marked. Child makes highly emotional effort to overcome the resistance or interference of the adult; or yells, cries, etc.; or else leaves the situation, sobbing or surcharged with inner emotion.

4. Average emotionality. Child becomes somewhat emotional at thwarting, especially if his earnest desire is blocked unexpectedly.

7. Emotional response is negligible. Child attempts to overcome the resistance or interference without any excitement; or else stops this attempt and either obeys, compromises, or unemotionally leaves the situation.

50. *Bossiness in a group or with individual playmates:*

1. Child is "bossy" in a group—i.e., he habitually issues many unnecessary orders, or repeats orders or suggestions unnecessarily; or else he attempts a leadership which the others will not recognize, or regard obnoxious. Child is very often in the rôle of an over-ordering "boss," or an unwelcome and unsuccessful would-be "boss."

4. Average. Child occasionally is "bossy" under special circumstances (e.g., when with a group in which he feels per-

fectly self-confident, or when trying to show off); ordinarily, however, the child rather seldom over-orders, or makes attempts at leadership which are sufficiently unsuccessful or unwelcome to be called "bossy." *Becomes "bossy" with a very submissive playmate only, or if trying to show off.*

7. Child is never "bossy," *even under circumstances encouraging to "bossiness."*

51. *Boastfulness:*

1. Boasts profusely of what he has done, will do, or can do; reports in boastful tones what he saw, heard, etc. Exceptionally boastful.

4. Average. Does not usually boast unless he has seen something really remarkable, or unless he is in a group of boasting children, etc.

7. Does not boast even under circumstances encouraging to boasting. Modest, tends to reticence, does not boast.

52. *Fault finding:*

1. Child is needlessly, uselessly, and indiscriminately fault-finding. Continually finding fault with his play-materials, with the way his playmate does things, etc. Apparently uses fault-finding as a means of expressing irritability, etc.

4. Average. Usually criticizes and finds fault only when such criticism is useful or justifiable. Is discriminating in his criticisms; does not find fault needlessly, or use fault-finding as a general means of self-assertion.

7. Child rarely gives expression to criticism or fault-finding, even when criticism would be justifiable and might *readily be expected. Child either excuses short-comings and deficiencies, or fails to observe them; or fails to express his* criticism. Child is not at all overtly "fault-finding."

53. *Blaming of others* ("projection"):

1. Child customarily blames others for failures or trouble, even when the others have had practically nothing to do with his difficulties or troubles.

4. Average. Does not blame another who has had no connection with his troubles or difficulties; but is inclined to *assign a somewhat exaggerated portion of the blame to a* child who has had a partial connection.

7. Accepts obstacles and frustrations as his own responsibility; rarely blames another for his failure; never exaggerates the other's share in causing the trouble or difficulty.

54. *Bullying:*

1. Threatens, intimidates, or bullies other children, especially children smaller than himself.

4. Average. Seldom bullies.

7. Never threatens, intimidates, or bullies other children, not even children smaller than himself, and who are known to be generally submissive.

55. *Ruthlessness, lack of kindness and consideration for others:*

1. Child is ruthless in his neglect to consider others; unthoughtful; fails to be kindly and sympathetic. E.g., will without warning, and with needless vigor, unceremoniously push an unwelcome child off his wagon or see-saw; will ride his wagon dangerously near (or even right over) another's child's carefully made mud pies; if his playmate has been hurt and is crying, the child unconcernedly continues to play by himself (or calmly seeks another playmate, or at best waits impatiently and unsympathetically till the other child stops crying); child does not lend an assisting hand to another when the opportunity offers unless he feels that such aid will directly help his own plans, or unless he is compelled to (e.g., by social pressure); etc.

4. Average. Is moderately kind and sympathetic to his favored playmates, and less so to others.

7. Child is exceptionally sympathetic, considerate, and thoughtful to others. Kindly and helpful to all.

56. *Irritability:*

1. Often irritable, easily annoyed; tends to become cross, fretful, or peevish.

4. Average. More irritable when tired or hungry, than when fresh and well.

7. Exceptionally even tempered; imperturbable; is rarely annoyed or cross.

57. *Quarrelsomeness:*

1. Child's contact with other children quickly turns into argument, contradiction, dispute, quarreling. Child picks quarrels with others very readily, on slight provocation.

4. Average. Child will dispute and quarrel when wronged, but otherwise is usually peaceful.

7. Child is exceptionally peaceful and amicable. Seldom disputes, contradicts, quarrels, etc., even under rather strong provocation.

58. *Ease of stimulation of anger* (other than anger displayed in temper tantrums, when child is dealing with adults):

1. Child is easily stimulated to anger. Is readily angered by difficulty, failure, teasing, partiality to another, disappointment, refusal of a child or adult to accede to his wishes, by a violation of his rights, by a slap or push, disciplinary measures, etc.

4. Average. Does not usually become angry unless he has been obviously and markedly wronged.

7. Rarely becomes angry; is exceptionally difficult to move to anger; child is either unemotional, or else his emotion is something other than anger.

NOTE: In the trait immediately above, the "anger" referred

to may be frank, open, obvious ("overt"), or it may be hidden, concealed, suppressed ("implicit").

59. *Attacking others:*

1. Child very frequently attacks the other child who denies him what he wants. Quickly resorts to hitting, kicking, pushing, etc.

4. Average. More likely to attack if the other child is smaller than himself, or if no adult is at hand.

7. Child rarely attacks.

60. *Delayed retaliation* (revenge):

1. Child is revengeful. Will not neglect an opportunity to push, hit, or in other ways be nasty to another child who has offended him previously. Child evidently tries to get very thoroughly "even" with the previous offender.

4. Average. Does not help child who a short while ago has offended him, but does not go out of his way seeking opportunities for revenge.

7. "Makes up" with the other child promptly; never thinks of "getting even." *Once the offense is done, child forgets it* quickly and completely, and behaves toward offender the same as he does toward other children.

61. *Circuitous* ("compensatory") retaliation, continuing and *largely indiscriminate.*

1. Child habitually "takes out" on others the injuries done to himself. Not a matter of prompt turning around to "get even" through abusing a third (innocent) party; but a habitual mistreatment of all children whom he can punish, in return for the punishment or mistreatment which he himself receives (or has received).

4. Average. Child does not treat other children as well after having been grievously offended, but seldom becomes actually nasty or indiscriminately revengeful.

7. Child never resorts to indiscriminate nastiness of an apparently revengeful kind. Retaliation (if any) is either prompt and uncontinuous, or else directed at the child responsible for the offense.

62. *Proneness to antipathies* (intense, lasting hatred):

1. Readily moved to deep and unforgetting hatred. Child's dislikes tend to turn into relatively permanent hatred.

4. Average. Child's dislikes are rarely so strong as hatred, except for a short time or after exceptional provocation.

7. Child has never shown any sign of developing an antipathy, even after relatively strong provocation. Not at all prone to intense, lasting hatred.

63. *Jealousy of partiality to another child:*

1. Child is quick to notice and reacts strongly to partiality shown another; extremely jealous.

4. Average. Notices and resents flagrant cases of par-

tiality but is apparently unaware of, or unconcerned with, minor causes for possible jealousy.

7. Child does not notice favoritism or partiality to another. No sign of jealousy.

64. *Nervous habits:*

1. Shows numerous nervous habits (or marked addiction to one nervous habit); e.g., fidgets, sucks thumb, bites nails, twitches face or shoulders, curls or twists hair, plays with mouth or face, etc.

4. Average. Shows some nervous habits under provocation.

7. Free from all signs of any nervous habits.

65. *Stammering:*

1. Stammers or stutters.

4. Average. Normally does not stammer or stutter unless excited.

6. Free from stammering or stuttering even when rather excited. (Do not rate any child higher than 6 on this trait.)

66. *Special peculiarity of child's usual facial expression:*

1. Customary expression on the child's face is especially peculiar—making child look as though frightened, or ready to cry, or ready to be startled or surprised, etc. Child's face either seems to bear the marks of a severe emotional experience in the past, or to express a peculiar emotional condition at the present.

4. Average. No special peculiarity in child's customary facial expression. (Do not rate any child higher than four on this trait.)

67. *Sulking:*

1. Child is prone to become sullenly unresponsive; sulks frequently or prolongedly upon slight provocation.

4. Average freedom from sulking. Does not sulk.

5. Exceptional freedom from sulking. (Do not rate any child higher than five on this trait).

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LEARNING BY CHILDREN AT NOON-MEAL IN A NURSERY SCHOOL: TEN "GOOD" EATERS AND TEN "POOR" EATERS 491

By Jeanette B. McCay, Ethel B. Waring, and Paul J. Kruse

STUDIES IN THE INTERPRETATION OF PLAY: I. CLINICAL OBSERVATION OF PLAY DISRUPTION IN YOUNG CHILDREN . . . 557

By Erik Homburger Erikson

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JEANETTE B. MCCAY, ETHEL B. WARING, AND PAUL J. KRUSE

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I. Introduction 493

II. Techniques of measurement of learning at noon-meal . . 503

III. Learning by twenty children: Ten "good" eaters and ten "poor" eaters 509

IV. Summary and conclusions 543

V. Implications of this study 549

References 553

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I. INTRODUCTION

It may seem strange to the person who is not acquainted with children of preschool age to apply the concept of learning to eating. The psychologist however observes that even birds must learn to eat. Gesell (21) makes a developmental log of the golden eaglet, based on the monograph and observations of H. B. Macpherson. At two weeks he notes the mother feeding her eaglet from her beak with tid-bits of liver and grouse.

> *At three weeks:* First lesson in feeding self. (Mother holds carcass, cleared of entrails, toward eaglet.) *At six weeks:* (Eaglet) *tries to open carcass of leveret but fails. At seven weeks:* Mother "shows him" how to split leg at joint preparatory to swallowing. (This was learned in about a week, apparently.)

The physiologist, Carlson (11), notes that:

> Conscious direction as well as the factor of imitation probably plays a rôle in newly hatched chickens "learning" to feed. In the young birds that secure their food by thrusting their beak and head down the throat of the mother, maternal direction is also probably the initial factor.

While with animals the learning has to do chiefly with gaining motor skills, the young human in our culture has the additional problem of learning positive attitudes toward feeding. In some way many children acquire a negativistic set or attitude toward food and eating. Roberts (32) cites three studies, unpublished master's theses, carried out under her direction, which indicate the prevalence of feeding difficulties among young children. Mosely surveyed 100 city children from comfortable or well-to-do homes; Johnston studied 50 farm children; and Dumond, 100 children from one of the poorest sections of Chicago. Roberts states the results:

> In the well-to-do city group only one-third of the children could be considered as having fairly normal reactions to their food, and only 19 of these were of the highest order, coming to *the table eager for food and eating straight through without any* urging or other device. The remaining two-thirds showed varying degrees of non-hunger, 40 being of the extreme type that had to be urged and coaxed during the entire meal which often dragged out to interminable lengths. Every known device to avoid eating was exhibited in this group—dawdling, playing

> with food, storing food in the cheeks, spitting it out, vomiting, stalling, crying, and downright refusal to take food in the mouth.

In the country, however, Roberts states that the results were reversed:

> Two-thirds of the children reacted normally to their meals and one-third were in the non-appetite group. In the poorer city section, 86 of the 100 children observed were classed as hungry and 14 as non-hungry, only five of whom were of the extreme type.

Other writers in the fields of child psychology and nutrition record the prevalence of the same difficulties. Brenneman (9) remarks that one of his pediatrician acquaintances paid for his new house with anorexia, *"And it is no small house!"* He places the lowest estimate of incidence in private pediatric practice as 50 per cent.

Bartlett (4) reports that of 1,471 children in the outpatient department of the Massachusetts General Hospital, 349 or 24 per cent came with loss of appetite as a presenting symptom. This was the chief cause of disability, twice as many cases as came with colds.

In McCarthy's (26) study of children's feeding problem in relation to the food aversion in the family, 14 of her 48 children were "feeding problems." Similarly, 24 of the 69 nursery school children, whose eating habits Eliot (17) studied in relation to personality development, were classed as "finicky."

Stoddard and Wellman (36) observe that "in spite of great muscular activity, outdoor exercise and physiological need for nourishment, some children may resist strenuously the taking of food, and in some cases carry this resistance to extraordinary limits."

Stuart (37) writes that:

> It is an age (18 months to 6 years) during which children are more apt to be disinterested in food than to wish to overeat, and a time when dislikes and quirks of appetite are apt to lead to an unbalanced diet. . . . Unwise handling of minor feeding problems, not unfrequently leads insidiously to refusal and vomiting of food, to the establishment of permanent dislikes and undesirable attitudes, and more rarely even to serious emotional disturbances.

"In a Chicago pediatric society," writes Aldrich (1), "50 to 85 per cent of the children cases were appetite problems."

"Food refusals," says Wagoner (43), "play a large part in making the modern home an uncomfortable place, at least at meal time."

A. Theories of Child Feeding

There are several points of view as to how problems of feeding young children should be solved.

1. *Strict Supervision*

The oldest and probably still the most prevalent theory is that of strict supervision, both as to the food offered and how the child shall eat it. The adult decides what foods and how much are best for the child, and then does all in his power to make the child eat them, holding utensils in the approved manner, taking little bites, chewing a long time. The hope is that the child will learn to eat the food set before him without delay and in the manner acceptable to our society.

One of the teachers described by Borgeson (7), in her study of the techniques used by teachers during the lunch at nursery school, must have subscribed to this theory since at one meal she gave as many as 71 commands to one child!

Woolley (45) notes that "the general attitude of doctors, nutritionists, and scientifically-minded mothers has been that the young child should be given very little if any right to select his own food."

In a symposium of nursery school feeding, Dale (12), who had charge of the nutritional work of the emergency nursery schools of New York State, writes under the title of *"Pre-arranged Meals for Nursery School Children:"*

> A food schedule based on definite articles and nearly definite quantities of food is the most economical to serve. Economical in time required for preparation of dishes, every one of which is used. Economical in cost because little if any of the food is wasted or carried over—with possible loss of nutritional value—to a second day.

Such strictness and definiteness, however, is thought by some psychologists and pediatricians to be one of the causes of the modern child's feeding difficulties. Aldrich (2) writes:

> —*the youngsters rebelled at being subjected to so unscientific a procedure as forced feeding.* As a result, unfortunately in many instances, neither quantity nor quality is

> eaten, and the whole nutritional system breaks down; family strife, unhappiness, behavior problems, phoblas, and indigestion appear.

Brenneman (9) describes many adults as being too "precisely concerned with intervals, percentages, quantities, and stools," and thus we have stimulated negativism and rebellion against authority and children's cravings for distinction whether good or bad.

While Gesell and Ilg (22) applaud the brilliant advances in pediatric supervision of infant feeding in recent years, and believe they constitute the most basic achievements of preventive medicine, they are of the opinion that the "nutritional hygiene of the infant has suffered from over-generalization. It is increasingly apparent that infant feeding needs an individualization of approach, which can be attained only by a recognition of the underlying behavior characteristics of each individual infant."

2. *Laissez Faire*

Some ten years ago the teacher-parent world was startled by the experiments of Davis (15) in letting newly weaned infants select their own diets. Her philosophy of *laissez faire* was in direct contrast to the older ideas of strict supervision. Nevertheless, Davis presented evidence to indicate that when children were offered various foods good for them, they were able to select for themselves an adequate diet over a long period of time. Though they often went on "jags" of eggs or other foods, they gained the food values they needed without suffering digestive upsets, and maintained good health and growth. Not only did the children select the foods they wanted from a large assortment and determine the amounts, but they were allowed to eat in any fashion that pleased them—with fingers or spoons, or putting their mouths down to the dishes. However, when in the judgment of the nurse, playing instead of eating began, the meal was considered over and the child was removed from the table.

Since the Davis experiment, nursery schools have tried similar experiments, though not on so large a scale. In the symposium on eating, referred to above, Prevey (31) describes a plan of self-service in the nursery school of the University of Minnesota. Seven children of three to four years of age had five to ten meals in a special dining room where the regular nursery school menu was

served, plus an extra cooked vegetable, raw vegetable, and dessert. "The foods offered, therefore, included two cooked vegetables, two raw vegetables, potato or substitute, meat or substitute, whole-wheat sandwiches, milk, and two desserts." There were a few exceptions to this plan. The emphasis was placed on self-service without interference from the teacher rather than on the variety of foods presented. The conclusion was that the children tended to eat more of the vegetables, meat, and potatoes and also desserts than they did when they were in the regular dining room, but they served themselves only about half as much milk. The attitude of the children was reported as "most satisfactory."

The results were suggestive rather than convincing, since the experiment was limited—too few children, too few trials. These children also had the benefit of training and habits formed under the former supervision. What children would do under this regime for the entire year might give a different picture, especially if they had had food difficulties at home before they came to school.

3. *Eating Considered as a Learning Situation*

Involved in the theories of feeding held by the staff of the nursery school at Cornell, is that eating is not a peculiar field set apart from ordinary life, but is a part of it. Behavior patterns that adults wish children to have must be learned and this also applies to the taking of food. In fact, because the taking of food plays a large part in the early life of the child and constitutes an early experience in adjusting himself to this environment, it may be more important and far-reaching than many of his later learnings. Studies and observations point out the striking relationship of eating habits to personality development and frequently indicate that personality difficulties originated in early feeding situations. Blanton and Blanton (5) believe that feeding periods are just as important from the standpoint of a child's mental health as of physical health and that "the way in which he learns to accept his diet constitutes the establishment of one of the patterns of behavior which will in later life apply to acts other than eating."

Aldrich (3) remarks that "the babies who have learned through satisfying experience to take their own responsibility for starting and stopping in the common functions of infancy, will be more adept in accepting the responsibility for learning when placed in the more

mature atmosphere of school. True progressive education begins with the nursing bottle and the potty, not with formal schooling."

In a study of the eating habits of two- and three-year-old children in relation to their personality development, Eliot (17) concludes: "Finickiness in eating should not be considered as an isolated problem in child development, or as purely nutritional. It should be thought of as a problem often associated with other problems which are also significant in personality development."

Brenneman (9), calling attention to the psychological aspects of nutrition, believes that "anorexia in children with all the temperamental and environmental forces that surround it, is easily one of the major factors, if not the greatest factor in the pathogenesis of the full-blown psychiatric problem."

Gesell and Ilg (22) remark many times how closely bound together is the mental and physical welfare of the infant:

> The feeding behavior of the infant is perhaps the most inclusive and the most informative single indicator of his personality. The whole feeding process may well be the most revealing single "test" of personality which could be devised. Feeding is a dominant preoccupation in the infant's psychic life and is doubtless more charged with affect, volition, and conscious control than it is in later years. It is intimately bound up with the parent-infant and family relationships. Temporary variations in conduct and fluctuations of mood are in a measure attributable to nutritional status. Feeding behavior also reflects permanent constitutional characteristics even in the new-born.

Discussing the fundamental needs of the child, Frank (20) points out: "Every group teaches the child to like the foods of its traditional choice, which means developing an appetite for an incredible array of foodstuffs, or supposed foodstuffs, and abhorring other foodstuffs of equal or greater nutritive value."

Appetite, as pointed out by Carlson (11), is more than the hunger contractions,—"a more or less uncomfortable feeling of tension or pressure and pain referred to the region of the stomach." In addition, appetite involves the memory "of past experience with food, that is, the taste, smell, and appearance of food. In fact it appears to be essentially pleasant memory processes of these past experiences." As Mursell (30) says, "It is not the hunger pang itself, but the hunger pang organized by learning into a complex whole of behavior, that leads to the selection and ingestion of appropriate food."

Thus the importance of early experiences in feeding is emphasized. Mohr (29) attributes emotional factors in nutrition work to the first experiences of infants:

> The very earliest feeding experiences may be hectic and disturbed, due to anxiety on the mother's part and perhaps to minor physical disturbances. The difficulties that arise on account of too late introduction of solid foods, delayed weaning, and similar irregularities in the feeding program are well known. A fact that the mother does not appreciate is that the child creates an emotional situation, or takes advantage of an emotional situation created for him, and uses it as a powerful weapon to obtain specific ends.

Later effects of early learnings in eating are suggested by McGraw (28), in her study of Johnny and Jimmy. Although Jimmy was the more vigorous infant and grew more rapidly at the beginning, Johnny at the end of the first year had outstripped him and continued to grow faster. His habits of eating also proved superior. On her observations McGraw based her opinion that:

> During the many months when Jimmy was being spoon-fed he developed lazy eating habits from which he has not been completely cured. Johnny, in contrast, especially during the early stage of his feeding training when his motor coördinations were poorly controlled, found it necessary to put forth a great deal of effort in order to get enough food. As his motor coördinations became more efficient he could consume a greater amount of food by expending the same amount of energy to which he had already become accustomed.

B. Learning at Noon-Meal in Cornell Nursery School

1. *Motor Skills*

Many of the motor skills concerned in eating have already been acquired by the time a child enters nursery school. The majority of children have learned to use a spoon, although there may be a few exceptions. Many are able to use a small broad-tined salad fork. Usually all can drink from a cup. Certain fibrous foods sometimes cause difficulty with chewing or swallowing. While the teacher usually notes these difficulties on the children's records, they have been included in this study only in a general way to interpret the progress of individual children.

The procedure of letting a child serve himself to a second dinner, and clearing the table at the end of the meal are very often new learnings. There may also be new sequences in serving and eating which differ from those the children have followed at home.

2. *Attitudes toward Eating*

A great deal of learning at the nursery school dinner has to do with developing a positive attitude toward food. Although the menus at nursery school are simple and include the most common foods considered healthful and acceptable to young children, there are almost certain to be a few foods which are new or disliked. The first time a new or disliked food appears, a very small amount is given. It may be only one-half teaspoon. If this is eaten easily, the remainder of the usual serving is given.

3. *Social Skills*

Even though a child may come to nursery school with most of the needed motor skills and a liking and willingness to eat the foods which are offered, the whole affective environment of eating is differently charged. In a new place with new people, it is not always so easy to perform as he does at home. His relationships with the teacher and the other children at his table may be entirely new social experiences.

C. The Plan of the Noon Meal

The plan of the noon meal in the nursery school at Cornell aims to contribute to useful learnings. Since few homes and few nursery schools are able to offer individual children or even adults a large selection of foods for any one meal, the plan of a self-selected diet on a large scale is not practical. On the other hand, instead of trying to make eating merely a routinized habit, in which the child sits down to the table and promptly eats whatever is put before him, the plan is to teach him to try at least small amounts of all foods on a menu and to serve himself to what he prefers and can eat promptly.

Learning to try new foods, learning to gauge his own appetite and to serve himself accordingly without wasting food, will be learnings which he will need as an adult.

During the years of this study, the dinner plan was for the teacher

to serve each child minimum amounts. This included only one tablespoon of meat or substitute, one tablespoon of potato or substitute, one tablespoon of vegetable, one-half cup of milk, and one sandwich (equal to ¼ slice of bread). Unless there was some special reason, such as illness or a strong dislike, the child was expected to take these amounts.

Though these amounts look ridiculously small to an adult, they were purposely small enough to be eaten without strain, even though the child was not so hungry as usual. After these minimum amounts had been finished, the child helped himself to whatever he chose of the dinner foods and as much as he felt that he could eat. At times the teacher curtailed his serving, saying, *"You may get more soon."* Sometimes when his servings were extremely generous and the teacher foresaw trouble in eating them all, she removed part of them to another dish, saying, *"Eat what is on your plate first, then you may have this,"* or *"I think you took too much. Eat what is on your plate and then if you have room for this, you may have it."*

With second servings, another half-cup of milk was poured, usually making a total of one cup for the meal. One-third cup of dessert was given and each child had opportunity to help himself to second servings. Since the study was completed, however, the plan has been to allow each child to serve himself to the amount of dessert which he prefers for his first serving also.

The purpose of this attention to learning, and this method of serving dinner is to give the child some of the benefits of each of the two extreme theories of child feeding. He learns to eat the small amounts that are given him, to try new foods, and to clean his plate. At the same time he profits from his own activity and experience in serving and selecting most of his meal himself.

While "forced feeding," as the term is usually understood, is not resorted to in this nursery school, neither are starvation methods used with feeding problems. Unless there are unusual circumstances, pressure is used if necessary to help a child to eat at least the very minimum servings. Beyond these he is free to do as he likes.

II. TECHNIQUES OF MEASUREMENT OF LEARNING AT NOON-MEAL[1]

A. Measures of Eating Behavior

In order to study progress in learning to eat, it is first necessary to find some objective measures. Blatz (8), in a study of eating habits, used six criteria for eating: "application, motor-inhibition, choice of tools, techniques of eating, motor coördination, tidiness." These however, have to do more with the manner of eating than the actual accomplishment, and Blatz noted that the judgment of the observer was often influenced by his own attitude toward the meal. Other approaches were therefore sought.

1. *Time Taken for Meal*

An obvious measure of eating ability is the time taken by a child to eat his dinner. This indicates in a general way whether he is an efficient or desultory eater. It is also suggestive of the amount of skill he has in feeding himself and his general attitude and ability in the eating situation. Many writers have referred to the fact that slow eating is one of the problems of this age. Foster and Mattson (18) observe that the slow eaters are more of a problem than the fast and that "children who stay long at the table eat less in amount than those who finish in a shorter time."

In analyzing child behavior at dinner in St. George's School for Child Study, Brown (10) found that "dawdling" was the type of behavior which most frequently needed adult redirection during dinner. Blatz (6) shows by charts, in his discussion of the training in eating habits of the quintuplets, that from the second to the third year, inattention to eating increased in all five of the sisters.

Borgeson (7) writes that "from the standpoint of demands upon the teacher's time, ingenuity, and attention, dawdling and food aversion were the significant problems that occurred."

Daniels (13), in a study of anorexia in children, used the time consumed in eating as a measure of her subjects' appetites, and found that she was able to shorten the eating time in half for some of her children by reducing the amount of cereal foods they consumed, and substituting other types.

[1]The authors wish to acknowledge the help of Dr. T. L. Bayne, Assistant Professor of Rural Education, Cornell University, in developing and using these measures.

Therefore it seemed fair to consider the time which a child takes to eat a meal as one criterion of his ability in the eating situation. One would certainly expect the child who satisfies his appetite in 30 minutes to be the superior eater (other factors such as age and size of child, amounts of food eaten, etc., being comparable) to the child who requires an hour and a half. The time required for eating was therefore adopted as one relatively accurate and objective measurement of progress in learning to eat.

An outstanding difficulty should be noted, however. The mere statement of time does not indicate how independent the child was in the meal, and whether he took his own time or was helped along and hastened by the teacher. Whenever possible, the teacher made note of such circumstances. With three or four children at a table limiting the teacher-attention that could be given to any one, it was believed that the dinner times over the course of a number of months would fairly represent the children's abilities. Promptness, of course, has its limits, but preschool children rarely approach the undesirable limit of eating too fast.

2. *Amount of Food Eaten*

The amount of food eaten at the meal is another factor which can be objectively measured. This would indicate whether a child had learned to eat amounts which seem suitable for his needs, and something of his feeding skill and his attitude towards the foods offered in the nursery school menus. Next to "dawdling" in Brown's analysis of food difficulties of nursery school children came "food refusals." Fenton (19) remarks that "an active runabout baby is not likely to overeat; he is in more danger of not eating enough, because his eager interest in all sorts of activity makes him inclined to want to run away from the table as soon as the edge is taken off his hunger."

Wetzel (44) in his studies "*On the Motion of Growth*" presents curves which indicate that the absolute velocity of growth decreases sharply after birth, reaching its lowest level at about three years, and then gradually increases through puberty. At the same time that the speed of growth is at a low point, heat production is lessened and the total calories consumed by a child, two years to four years of age, have a tendency to be lower than they were as an infant. If his studies are representative of all children, the lessening of appetite at

this age is a normal occurrence, even though parents find it disconcerting to have food refused when they had been accustomed to spooning into eager mouths big bowls of cereal. Blatz (6), in his studies of the quintuplets, notes that "at the end of their second year, the children's refusals seemed to increase in frequency." The amount of food consumed, therefore appeared to be a significant measure of eating ability which would be useful in this study.

Since weighing amounts, accurate measuring or computing of calories were tasks too complicated for a limited nutrition staff, the simple plan was adopted of estimating the meal in arbitrary units. One tablespoon of solid food, either of meat, potato, vegetable, or dessert was considered as one unit; 1/3 cup of milk was considered one unit; and one sandwich, equivalent to ¼ slice of bread, was considered one unit. Thus adding these units together gave a rough indication of how large a meal was eaten. For instance, in Table *A* is a typical dinner of a nursery school child, as estimated by the teacher at the table:

TABLE *A*

Menu	First serving	Second serving	Units
Meat loaf	1 tablespoon	3 tablespoons	4
Buttered cabbage	1 tablespoon	½ tablespoon	1½
Mashed potato	1 tablespoon	3 tablespoons	4
Rye crisp	1 piece	7 pieces	8
Milk	½ cup	½ cup	3
Cranberry apple-sauce	5 tablespoons	——	5
		Total units	25½

From time to time the various teachers at the tables checked themselves and each other in their estimates of food, against actual measures. In this way they tended to keep their estimates approximately equivalent.

These units of food could be interpreted in different ways. They describe the bulk or volume of food eaten; they represent rather comparable difficulty, assuming that a child will find one tablespoon of solid food to be about as easy to consume as one small sandwich or a third of a cup of milk. Finally they give a basis on which to estimate calories of a meal, allowing about 20 calories per unit. Obviously a tablespoon of string beans and a tablespoon of ice cream are not

equal calorically, yet when all the foods of the meal were put together and the number of units multiplied by 20, the result gave a fair indication of the calories consumed.

To determine how close this correspondence was, 20 meals of nursery school children which had been recorded in tablespoons of food, cups of milk, slices of bread, were estimated for their caloric value on two plans. With the first plan, the nutritionist in the nursery school and the teacher of nutrition for preschool children each made an estimate of the number of calories in each meal, using standard tables of calory values. These two persons agreed to an extent represented by a correlation coefficient of .88.

In the second plan, the calories were computed by multiplying the number of units per meal by 20 and these were compared with the estimates of the nutritionist in the nursery school. This gave a correlation coefficient of .87.

In other words, an estimate of calories by another person from standard tables, and a reckoning by multiplying the number of units by 20 agreed about equally well with the nutritionist's figures. The food units, therefore, were believed to be a useful approximate measure of the food consumed by a child at dinner.

3. *Efficiency Score*

Since the time taken to eat a meal and the amount of food were independent measures of eating, it seemed desirable to make a score which would represent the relationship between the two measures—an "efficiency" score as it were. This plan was adopted: One hundred was chosen as an arbitrary number; from this constant the time in minutes was subtracted, and to the result the number of units eaten was added. For example, if a child ate a dinner of 25 units in 25 minutes, he would then have an efficiency score of 100:

100
— 25 minutes

75
+ 25 units

100 score of efficiency

But suppose he ate 25 units in 50 minutes:

100
— 50 minutes

50
+ 25 units

75 score of efficiency

TABLE *B*

Time	Amount	Simple ratio	Ratio score	Efficiency score
20	*20*	*1/1*	*100*	*100*
40	20	2/4	50	80
30	*20*	*2/3*	*66*	*90*
30	40	4/3	133	110

TABLE 1

PERCENTAGE DISTRIBUTION OF UNITS OF FOOD EATEN AT NURSERY SCHOOL DINNER BY ALL CHILDREN, 1932-33 AND 1933-34

	Low intervals Units		Average intervals* Units			High intervals Units	
	0-6	7-13	14-20	21-27	28-34	35-41	42+
Year	Percentage		Percentage			Percentage	
1932-33	—	2	27	48	21	3	—
1933-34	—	3	23	36	30	7	1

*In the present study the average interval was considered as 21-27 units.

TABLE 2

PERCENTAGE DISTRIBUTION OF TIME SPENT AT NURSERY SCHOOL DINNERS BY ALL CHILDREN, 1932-33 AND 1933-34

	Low intervals Minutes		Average intervals* Minutes			High intervals Minutes	
	10-19	20-29	30-39	40-49	50-59	60-69	70+
Year	Percentage		Percentage			Percentage	
1932-33	—	3	20	31	25	11	9
1933-34	—	6	28	29	24	9	3

*In the present study the average interval was considered as 40-49 minutes.

TABLE 3

PERCENTAGE DISTRIBUTION OF EFFICIENCY SCORES AT NURSERY SCHOOL DINNERS OF ALL CHILDREN, 1932-33 AND 1933-34

	Low intervals		Average intervals*			High intervals	
	40-49	50-59	60-69	70-79	80-89	90-99	100+
Year	Percentage		Percentage			Percentage	
1932-33	6	7	15	28	28	13	3
1933-34	—	8	17	21	24	22	9

*In the present study the average interval was considered as 70-79.

The reader may ask why this plan was preferred to a simple ratio between time and amount. Such a ratio (the amount eaten, divided by the time to eat it) was considered and it was decided that it gave exaggerated variations; a few minutes' difference in time caused a wide spread in the scores and seemed to magnify a difficulty. The comparison of the two methods may illustrate the point (Table *B*).

B. Methods of Using These Measures

These three measures of time spent in eating, amount eaten, and efficiency of eating made possible objective studies of the learning of children at dinner. Individual differences could be observed and a child's performance compared with that of the group, or with his own earlier behavior. Daily study could be made of his progress and his variations in efficiency caused either by changes in amounts of food or promptness of eating. Also, learning curves could be made of these measures.

The measures also offered a way to study the effects of menus on the eating behavior of children and a way of observing relationships between a child's eating ability and other aspects of his development.

A background which makes possible the comparison of individual children with the performance of the group consists of preliminary studies using these measures, made by MacLeod (25) in 1933 and Tilden (40) in 1934. In the symposium on nursery school feeding (35) referred to earlier, the staff of the nursery school at Cornell summarized these studies. Percentage distributions of each of the three measures of eating behavior are shown spread over seven intervals. These may be seen in Tables 1, 2, and 3.

III. LEARNING BY TWENTY CHILDREN: TEN "GOOD" EATERS AND TEN "POOR" EATERS

This study was made of two selected groups of children representing the most efficient and the least efficient eating behavior at the noon-meal. The study utilized the data available in the records of the nursery school children.

A. Selection of Children

Twenty children were selected from the enrollment of three different years, 1933-36, according to their performance at dinner during the first month they were in nursery school. One group of 10 was chosen from the children who made the highest median efficiency scores the first month of school. These children also showed average or better than average scores in time and amount according to the distributions of the two groups in Tables 1 and 2. These comprised the "good" eaters.

The second group of 10 was chosen from the children showing the lowest median efficiencies the first month of school. These children had scores which were average or lower than average in time and amount of food eaten, according to the distributions of the two groups in Tables 1 and 2. There were about as many details of superiority among the "good" eaters as inferiority among the "poor" eaters.

Table 4 indicates the children who were selected and their median scores for the first month in the three measures of eating behavior. Their highest and lowest scores in each of these measures during the month have also been included as well as the spread between these highest and lowest scores. From this table, it may be seen that all of the "poor" eaters had median efficiency scores of 72 or less, while all of the "good" eaters rated 82 or above. When the median times required for eating were compared, the two groups differed also. Fifty per cent of the "good" eaters tended to finish in 37 minutes or less, while eight of the ten "poor" eaters required 52 minutes or longer. In amounts there were also distinguishing differences between the groups. Fifty per cent of the "poor" eaters ate 20 units and less, while all of the "good" eaters had medians above this amount. The two groups of children differed in tendencies as indicated by these median measures of time, amount, and efficiency.

TABLE 4
SCORES OF CHILDREN FIRST MONTH OF NURSERY SCHOOL

	Efficiency			*Time*			*Amount*		
	Median	Range	Spread	Median	Range	Spread	Median	Range	Spread
			"Good" eaters						
1933-34									
Andy	94	85- 99	14	31	21-36	15	24	20-32	12
Jane	90	78-105	27	35	25-51	26	25	23-29	6
Jacky J.	89	65-100	35	48	30-65	35	33	27-41	14
1934-35									
Barby J.	89	78- 99	21	37	29-40	11	27	16-34	18
Barbara	85	69- 91	22	42	30-52	22	24	20-30	10
Jacky N.	83	50- 97	47	45	30-79	49	28	23-36	10
Arthur	82	66- 99	33	45	25-68	33	27	22-34	12
1935-36									
Donnie	93	72-102	30	35	27-55	28	28	21-35	14
Judy	82	67- 96	29	43	25-60	35	24	18-30	12
Virginia	88	68- 95	27	35	30-50	20	22	18-29	11
		Average spread 28.5			Average spread 26.4			Average spread 11.9	
			"Poor" eaters						
1933-34									
Margaret	53	46- 63	17	48	32-57	25	16	11-21	10
Barton	58	17- 67	50	55	50-70	20	19	16-22	6
Earl	61	32- 69	37	63	38-75	37	20	13-29	16
1934-35									
Cathy	63	51- 79	28	55	43-67	24	20	16-29	13
Eliot	67	27- 89	62	55	40-80	40	26	7-34	27
Jonathan	69	52- 90	38	52	34-67	33	21	19-24	5
Mary	71	57- 87	30	60	40-68	28	24	18-40	22
1935-36									
Jimmy	69	46- 83	37	47	30-70	40	18	10-23	13
David	69	44- 89	45	53	29-75	46	21	18-30	12
John	72	49- 86	37	55	30-73	43	21	13-30	17
		Average spread 38.1			Average spread 33.8			Averages spread 14.2	

When the variations in these measures, the spreads between the highest and lowest scores during the first month of nursery school were averaged for each group, in each measure there was a smaller average spread for the "good" eaters than the "poor" eaters. This indicates more variability in the eating behavior of the "poor" eaters during this first month of school.

The terms "good" and "poor" are meant to have no moral implications, but only to describe the ability in eating which was shown during the first month of nursery school. The "poor" eaters by no means presented extreme problems nor could they be called cases of anorexia. They represented the children who had relatively more difficulty at mealtime. Over the course of a year, a few of the "poor" eaters did as well in some of the measures as a few of the "good" ones. Often a "poor" eater ate very well for him and for his own development.

The chronological ages of the children selected for the study ranged from 23 months to 36 months and were distributed according to Table 5 which indicates no significant difference between the two

TABLE 5
CHRONOLOGICAL AGE OF CHILDREN FIRST MONTH OF SCHOOL

Age in months	Number of children "Good" eaters	"Poor" eaters
21-23	1	—
24-26	1	—
27-29	3	4
30-32	2	4
33-35	1	2
36-38	2	—

groups in this respect. The mean age of the "good" eaters was 30.1 months and 30.2 months for the other group.

There were 12 boys and 8 girls studied. Among the "good" eaters the sexes were equal, but in the group of "poor" eaters, there were seven boys and three girls.

B. PROBLEMS TO BE STUDIED

Some of the questions to be answered for this group of children were:

Are these two groups which were selected on the basis of

their eating performance the first month of nursery school, still distinguishable as groups when considered in the light of their total year's eating behavior?

What changes occur in the measures of time, amount, and efficiency during the year which can be interpreted as evidences of learning, and are there differences in the learning of the two groups as shown by these measures?

Do children show progress in learning to eat particular meals when they are repeated at several weeks' intervals? Do "good" and "poor" eaters show differences in these learnings? How important is the menu in determining children's performance at dinner?

Is the time taken by a child to eat related to the amount of food he eats? Do "good" and "poor" eaters vary in this respect?

What progress do children show in learning to eat new and disliked foods?

What are some of the developmental factors which may have conditioned the learning of these "good" and "poor" eaters? How do they vary in respect to: (*a*) former experiences with food; especially the food dislikes and the foods which are new when appearing in nursery school meals; (*b*) age; (*c*) intelligence or mental development; (*d*) physical development; (*e*) history of breast feeding; (*f*) growth during the school year; (*g*) health during the school year?

C. Comparison of Two Groups

1. *Performance during Year: Percentage Distributions of Measures*

Using the techniques of measurement described earlier, the meals of these 20 children at nursery school throughout the year were scored for the time taken at dinner, the number of units eaten, and the relation between these two measures, or efficiency. There were 924 meals for the "good" eaters, 899 for the "poor," making a total of 1823 meals. Figure 1 describes the performance of the two groups during the year. It presents distributions of the three measures of eating performance, means and standard deviations. There was a significant difference between the two groups in all of the measures, showing that the groups were different during the course of the year as well as during the first month of school.

a. Time taken for meal. In time, the "good" eaters ate in an average of 40 minutes with a standard deviation of 9.6 minutes,

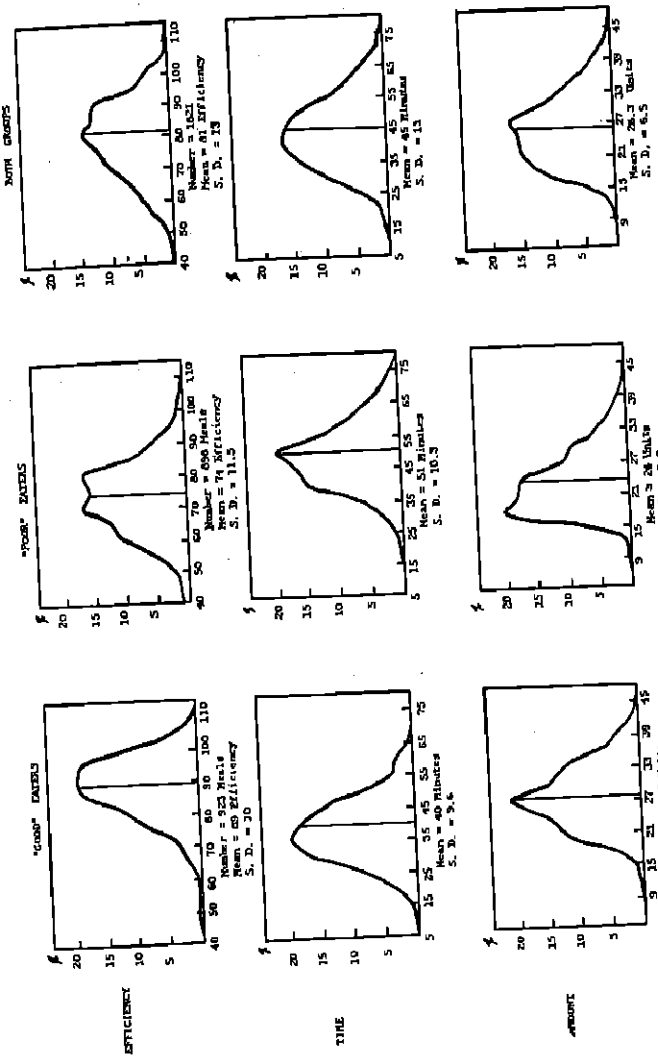


FIGURE 1

PERCENTAGE DISTRIBUTION DURING YEAR OF TWO GROUPS OF CHILDREN IN THREE MEASURES OF EATING BEHAVIOR

TABLE 6

DISTRIBUTION OF CHILDREN ACCORDING TO STANDARD DEVIATION OF SCORES DURING YEAR

SD Minutes	Time Number of children "Good" eaters	"Poor"	*SD* Units	Amount Number of children "Good"	"Poor"	*SD* Score	Efficiency Number of children "Good"	"Poor"
3- 5	1	—	3- 5	8	7	6- 8	6	—
6- 8	5	4	6- 8	2	2	9-11	3	9
9-11	4	5	9-11	—	1	12-14	1	—
12-14	—	1				15-17	—	1

TABLE 7

DISTRIBUTION OF CHILDREN ACCORDING TO THEIR AVERAGE SCORES FOR THE TOTAL YEAR

Mean Minutes	Time Number of children "Good"	"Poor"	Mean Units	Amount Number of children "Good"	"Poor"	Mean Score	Efficiency Number of children "Good"	"Poor"
30-34	1	—	18-20	—	4	65-69	—	2
35-39	4	1	21-23	1	2	70-74	—	3
40-44	2	—	24-26	1	2	75-79	—	3
45-49	3	4	27-29	4	1	80-84	2	1
50-54	—	4	30-32	3	1	85-89	3	1
55-59	—	1	33-35	1	—	90-94	4	—
						95-99	1	—

while the average time of the "poor" eaters was 51 minutes with a standard deviation of 10.3. It is interesting to compare these results with those obtained by other observers.

In Borgeson's (7) study, the highest average time spent at dinner for any one child was 41 minutes (age of child 2 years, 11 months) and the lowest average was 15 minutes (age of child 4 years, 3 months). This may be compared to Table 7 which gives the distribution of the individual children's averages. The average age of the Cornell children will be remembered as close to 2 years, 6 months.

The average time taken by Thurston's (39) children was slightly over 29 minutes, with a standard deviation of 7.93 for the younger group and 8.57 for the older group. The ages of these children ranged from 1 year 7 months to 3 years and 10 months.

Dunshee (16), in a study of the factors affecting the amount and kind of food eaten by nursery school children, separated out the 10 children who ate the most and the 10 children who ate the least. The 10 children who ate the most (mean age was 47 months) averaged 29 minutes at the table, and those who ate the least (mean age was 32.6 months) averaged 41 minutes for the meals.

One wonders why the children in the Cornell nursery school spent so much longer at the table than the children studied by other workers. Undoubtedly the method of service used at Cornell (serving the plates at the table, letting the children help themselves to second servings, clearing off the tables) required extra time. Perhaps more independence was also allowed without teacher interference or emphasis on speed of eating. More food was also eaten.

b. Amount of food eaten. In amounts, the mean of the "good" eaters was 28.5 units with a standard deviation of 5.9 units. The average of the "poor" eaters was 24 units with a standard deviation of 6.2.

Converted into calories, these units would represent about 560 calories for the "good" eaters and 480 calories for the "poor" ones. These figures are substantially above those of Dunshee's, whose 10 children who ate the most average 494 calories against the 10 who ate the least who average 414 calories. The amounts of food eaten by the children in Borgeson's and Thurston's studies was not mentioned.

c. Efficiency score. In efficiency, the mean of the "good" eaters was 89 with a standard deviation of 10, while the mean of the "poor" ones was 74, with a standard deviation of 11.5.

Converting Dunshee's estimates of calories into units and figuring efficiency scores from her means, it would give her children who ate the most an efficiency of 96 and the children who ate the least an efficiency score of 80.

It is interesting to note that the "good" eaters tended to have somewhat normal distribution curves for time and amounts, while the curves for the "poor" eaters were skewed in both of these measures. The spread was toward larger quantities and reduced time, which might indicate that the "poor" eaters were being directed by the teachers toward eating more promptly and larger amounts than they would naturally take.

d. Variability in eating behavior. Earlier, it was pointed out that during the first month of the school the "poor" eaters showed wider ranges between their best and worst scores, indicating that they were more variable in performance than the "good" eaters. Likewise, during the course of the entire year, the "poor" eaters showed more variability as a group through higher standard deviations in all of the measures. Also, when the means and the standard deviations of individual children were computed, there was the same indication of more variability in the performance of the "poor" eaters. This is shown in Table 6.

As a rule, the first month proved to be indicative of what the child's eating ability would be during the course of the year. In Table 7, the distributions in the three measures of eating behavior show that not only were the two groups differentiated the first month of nursery school, but also during the course of the year. Nevertheless there was some overlapping between the two groups as illustrated by the following. Before the year was over one child, who was included in the "poor" group (Jonathan), was considered by the teacher as comparable with the "good" eaters, and in fact gave records which were as good as some of them. Two of the "good" eaters (Virginia and Barbara), on the other hand were later classed by the teacher with the "poor" eaters, and they did lapse into lower efficiencies at times. Virginia tended to eat small quantities but her promptness usually kept her efficiency well up. Barbara was unusually variable, sometimes doing very well at dinner, other times very poorly.

In Table 7, the distribution of the children according to their

average scores for the total year is given, and shows the overlapping between the groups in each of the three measures.

2. *Learning during Year*

While measures of central tendency and variability do describe and differentiate the performance at dinner of the two groups and the relative eating ability of individual members of each group, they do not show the learning—that is the change in these abilities during the course of the year.

In order to see the changes as they occurred from day to day, week to week, and month to month, the three measures were recorded on graphs, chronologically from the first day of school through to the end of the year. However, the extreme variations from day to day made it difficult to see gains or losses in this manner. Figure 2, of Jackie's scores in eating behavior at nursery school, shows these fluctuations and the difficulty of interpreting the course of his development in this way. Such variations as these, however, are typical of children's growth and progress in all aspects, and are interesting in themselves. Many writers have observed such rhythms. McGraw (28) writes:

> Development works back and forth, yet steadily forward; here and there it strikes rapids, in other spots it pauses or regresses. The appearance of a new movement or aspect of a pattern facilitates or inhibits the growth of a previously developing movement and also determines the emergence and organization of a succeeding one. It is the gradual twining and interweaving of movements and phases of developing patterns which make it difficult to allocate the rhythms and spurts of growth.

Gesell and Ilg (22) also note the rhythms in the development of young children:

> Such progressive fluctuations, culminating in a more stable response, are characteristic of all behavior development, including feeding behavior. The fluctuations, instead of being regarded as undesirable or as fortuitous irregularities, should be interpreted as effortful attempts on the part of the organism to accomplish increasingly mature adjustments. From this point of view, fluctuations have a positive function in the economy of growth and learning. . . .
>
> It will be seen from these charts that the slight ups and

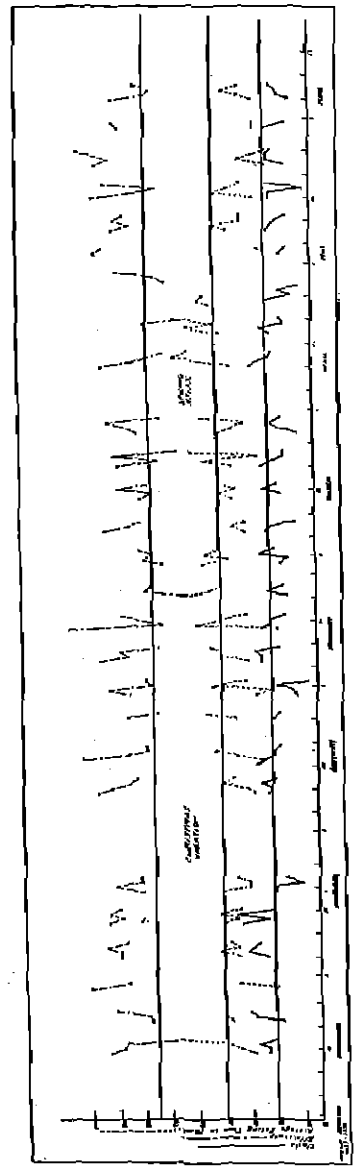


FIGURE 2
MEASURES OF JACKIE'S EATING BEHAVIOR AT NOON-MEAL IN NURSERY SCHOOL DURING YEAR

> downs of food intake are almost rhythmic in character, suggesting again a push and check mechanism which under favorable conditions insures a steady increase of body weight.

In allowing her three infants to make their choice of formulas, *Davis* (14) remarks:

> The most striking feature of their performance, however, is the wide variation in the quantities taken at a feeding. The maximum quantity taken at single feedings in every month seems large, especially in the first three months. . . . But with the minimum feedings relatively small—on some occasions little more than a taste,—the averages are not out of line with current practice. This pattern of eating behavior, i.e., occasional "stuffing" and meals of widely varying quantities is, of course, the natural one not only of mammalian young in general but also of the breast-fed baby. Furthermore, it is not merely an infantile pattern but one that continues to a greater or less degree throughout life.

Not only was occasional "stuffing" followed by meals of widely varying amounts evident for the children in both groups studied here, but the length of the meal also fluctuated from day to day, thus giving widely different efficiencies.

a. Learning curves. Larger time units were used as the basis for learning curves, Figures 3, 4, and 5. The meals for each child were arranged chronologically and then counted into groups of 25. The middle average intervals in time, amount, and efficiency in the two earlier studies as shown in Tables 1, 2, and 3 were used as basal figures. Out of a group of 25 meals, each meal that was better than the average in time, i.e., of 39 minutes or less, was charted on a time scale. Each meal that was better than the average in amounts, i.e., of 28 units or above, was charted on an amount scale. Likewise each meal with efficiency better than average, i.e., 80 or above, was charted on an efficiency scale.[2]

Thus, by comparing the number of meals which rated better than average in these measures, in each group of 25 during the year, it

[2]Since the charts were planned to indicate progress throughout the year they were modified for four "poor" eaters who had amounts which were unusually low or time unusually high. For Jimmy, Margaret, and Barton, average amounts of food (21 units and above) were included on their charts. For Eliot, average times (49 minutes or less) were included on his chart. These exceptions are noted on the charts themselves.

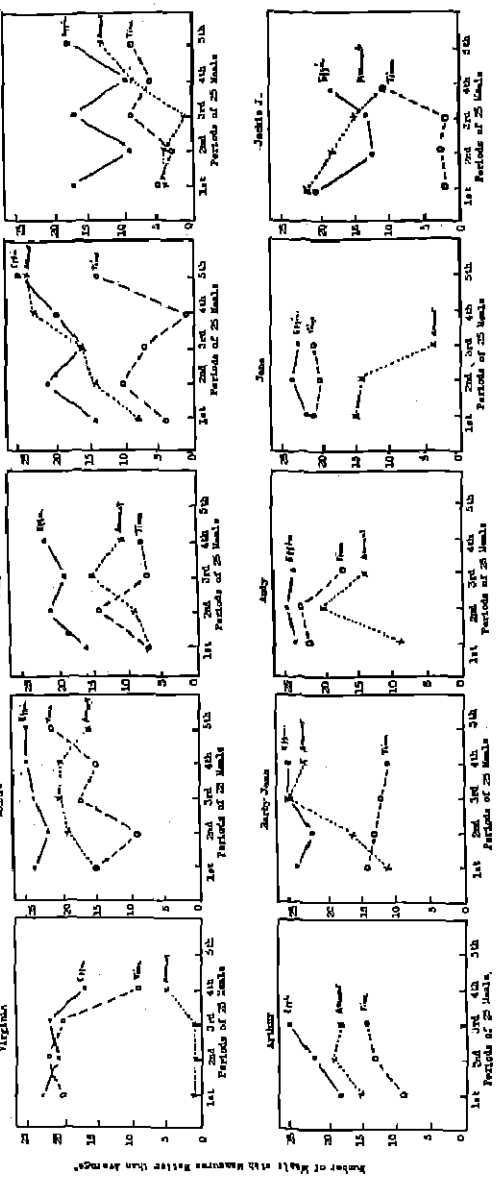


FIGURE 3

GRAPHS REPRESENTING LEARNING OF TEN "GOOD" EATERS TO EAT DINNER AT NURSERY SCHOOL

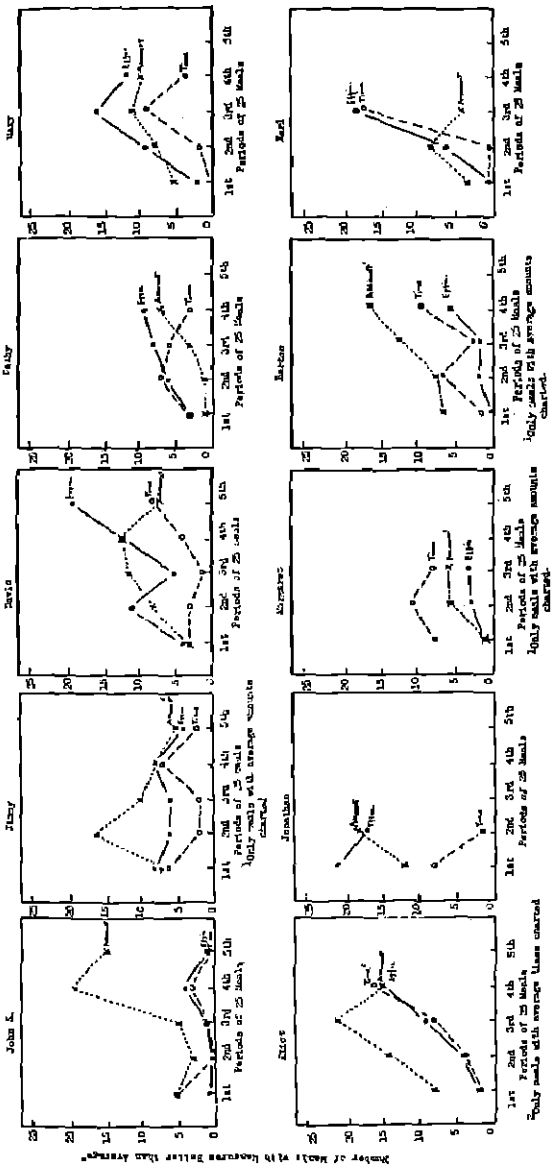


FIGURE 4

GRAPHS REPRESENTING LEARNING OF TEN "POOR" EATERS TO EAT DINNER AT NURSERY SCHOOL

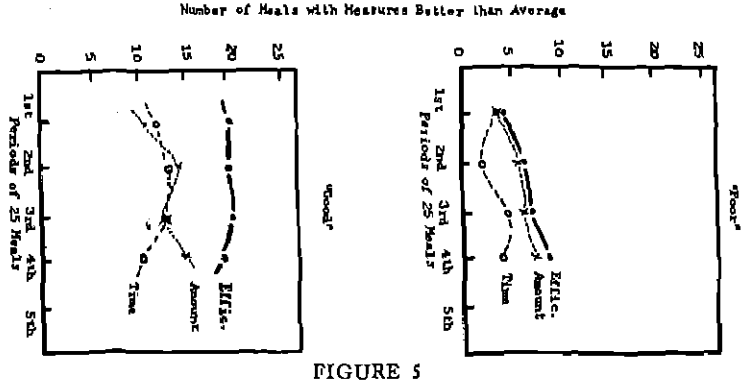


FIGURE 5

COMPOSITE GRAPHS REPRESENTING LEARNING OF TEN "POOR" EATERS AND TEN "GOOD" EATERS TO EAT DINNER AT NURSERY SCHOOL

was possible to follow the changes in eating behavior, for each of the children.

Periods of 25 meals were equivalent in the number of eating experiences at nursery school, but absences varied the continuity and the chronological time covered by some of the periods. Absences and duration of attendance also varied the number of periods which individual children experienced during the year. While some had as many as five periods, representing 125 meals during the year, others experienced as few as 50 meals or two periods. Figures 3 and 4 are graphs which represent the learning of the 10 "good" eaters and the 10 "poor" eaters in terms of the three measures. Figure 5 indicates the trends of each of the groups comparing the averages of the "poor" eaters and the averages of the "good" eaters in each of the periods.

From the charts it may be observed that improvement was not steady or uniform in either group, although all of the children showed improvement by the end of the year in at least one of the measures, and some children improved in all three.

Although the "good" eaters tended to keep their efficiency at higher levels than the "poor" group, they were somewhat variable within the group during the year in all of the measures. The loss in efficiency of some of the "good" eaters suggests that since they were already skilled in eating when they came to school and were near their limit of improvement, the dinner experience brought them

other learnings, such as social ones which may have interfered with eating performance.

A most interesting tendency was evident in the majority of both groups of children. Improvement in amounts of food eaten and time taken to eat usually did not occur simultaneously. The first periods of Donnie and Jimmy, the second period of Barton, the last period of Virginia are all good examples of this. Very often the amounts of food increased with a marked sacrifice in the time scores, sometimes quite out of proportion to the improvement in quantities. It seems as though the children tended toward a kind of equilibrium which was disturbed when increases in intake were above their customary levels. When this disturbance of equilibrium occurred, that is, increasing amounts of food causing a disproportionate increase in the length of meal time, the following questions were pertinent:

> Did a child really need and want this extra quantity?
> Was he able to eat it independently and digest it easily?
> Was there so much social stimulation or distraction at the meal, that he was unable to consume the quantity he desired in a fair amount of time?

The composite graphs in Figure 5, made of the averages of the "poor" eaters, and averages of the "good" eaters in each of the periods, illustrate even more clearly the trends of the two groups in learning to eat dinner at nursery school. It shows that the "poor" eaters increased fairly consistently in efficiency and in the amounts eaten, while with the increase in amounts during the first period of 25 meals, there was a marked loss in time. In the third period, the equilibrium between amount and time was somewhat regained on a slightly higher level. But in the fourth period, with another gain in amounts, time again suffered a loss.

The composite chart for the "good" eaters shows that they held their efficiency throughout three periods with only a slight drop in the last one and were no doubt near their limit of improvement. Measures of time and amount showed parallel changes through the first three periods, but in the fourth period when the number of meals with above average amounts increased, the time curve showed quite a sharp loss in number of superior meals—the same effect as seen in the last period of the "poor" eaters. This gives further

indication that an increase in food tends temporarily to disturb the equilibrium and disproportionately adds to the time of eating.

b. Changes, first to last month. Another method of seeing improvement in eating ability was to compare the median scores which the children made the first month of nursery school with those of the last month of the school year. Table 8 is a summary of the

TABLE 8

DISTRIBUTION OF CHILDREN ACCORDING TO IMPROVEMENT BETWEEN FIRST AND LAST MONTH'S MEASURES OF EATING BEHAVIOR

	On median scores		On variability (spread)	
	Number of children			
	"Good" eaters	"Poor" eaters	"Good" eaters	"Poor" eaters
Efficiency				
Improved	6	9	4	6
Same	–	–	–	–
Lost	4	1	6	4
Time				
Improved	5	7	4	6
Same	1	3	–	–
Lost	4	–	6	4
Amount				
Improved	6	9	–	1
Same	1	1	1	2
Lost	3	–	9	7

results. This shows that the majority of children in both groups did improve in all the measures during the course of the year. However, the greatest improvement in each measure of time, amount, and efficiency was shown by the "poor" eaters, and likewise the least loss in these measures. In other words, learning was greater for the children who had most need to learn.

The change in "spread," that is the differences between the children's least and greatest scores, from the first to the last month of school is also interesting. The tendency for the "poor" eaters was to have less difference between their least and greatest scores in efficiency and time, the last month of school in comparison with the first. In amounts, however, seven of the 10 "poor" eaters increased their spreads, indicating more variability in this respect. Thus they were becoming more consistent in their eating performance in respect to time and efficiency while fluctuating in the amount eaten according to the appetite of the day.

On the other hand, the "good" eaters tended in all three of the measures to be more variable the last month of school than they were the first, though the improvement in median scores indicates that the level of performance was usually superior.

It appears, therefore that while the "poor" eaters showed more progress, all the children were learning since they improved in food intake, promptness, and eating efficiency over the year.

c. Relation between time and amount. From the learning curves there was a tendency evident for children to require longer meal times when increasing their amounts of food above their customary levels. The question was therefore presented: is there a correlation between the amounts eaten and the time taken to eat? Some writers have observed that the more "dawdling" at meal time, very often the less food is eaten. Dunshee (16) concluded from her study of 37 children that the children who stay at the table the longest time on the average tend to eat less food. These children who took a long time and ate small amounts of food would be comparable to this group of "poor" eaters who had been selected because they had the same type of eating behavior. The question asked here is whether an individual child tends to eat less the longer he stays at the table. This relationship would indicate the wrong type of learning, and it would be worth knowing whether one group shows more of this type of behavior than the other.

In the studies of both MacLeod (26) and Tilden (40), rank correlations were run each month between times and amounts for each child. Sometimes there was a low positive correlation, and very often during the winter months some of the children with eating difficulties gave a negative correlation between these two measures. For instance Barton, one of the "poor" eaters in the present study, exhibited the following rank correlations between time and amounts, according to the figures of Tilden (Table *C*).

A few Pearsonian correlations between time and amount were

TABLE *C*

	Nov.	Dec.	Jan.	Feb.	March	April	May
Rank correlation between time and amount of food	.09	.03	.42	—.48	—.22	—.41	.26

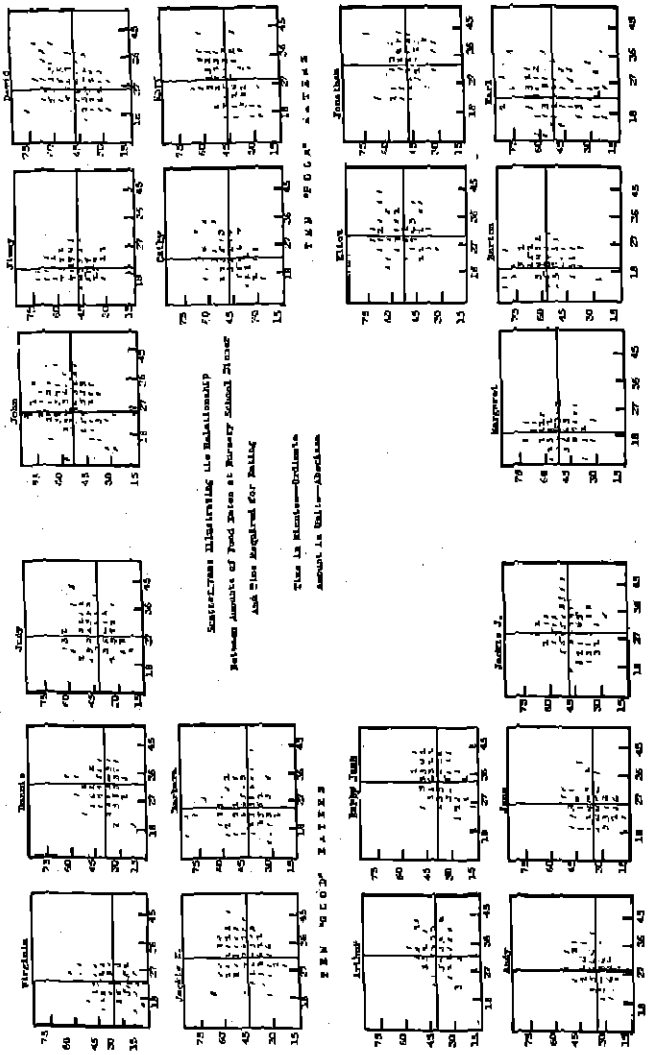


FIGURE 6

SCATTERGRAMS ILLUSTRATING THE RELATIONSHIP BETWEEN AMOUNTS OF FOOD EATEN AT NURSERY SCHOOL DINNER AND TIME REQUIRED FOR EATING

determined for individual children during the course of the entire year, and were found to be very low and without significance.

The scattergrams in Figure 6 for all of the meals during the entire year for each of the children, show little correlation as a rule between the two measures and indicate that each measure often moves independently of the other. The lines drawn across each chart show the mean in time and amount for that child. The upper left-hand quadrants indicate how long a time some children spend eating small quantities. This would represent undesirable learning. The lower right-hand quadrants, on the other hand, indicate the meals of large amounts which were eaten relatively promptly.

For most of these children, the time taken to eat a meal often did not indicate how big a meal was eaten; and likewise the size of the meal usually was not a criterion of the time taken to eat it. However, it would appear from the scattergrams that there were more of the "good" eaters such as Barby Jean, Judy, Arthur, and Andy who tended to perform consistently at dinner, that is to take a short time to eat a small meal and a long time to eat a big meal. Also in the group of "good" eaters there was less of the undesirable learning shown of small intakes requiring long times.

d. Successive performances on same food combinations. Another problem was to discover the importance of the menu in the learning by children to eat dinner at nursery school and whether it was more effective with one group than another. The kind of menu, Borgeson (7) felt, was the outstanding factor in determining the child's performance at dinner, and was also the cause of eating problems. Fluctuations in talking, she observed, seemed to be due more to the type of menu served than to any other factor. "Difficult foods caused certain children to become at times distracting and exceedingly talkative."

Some of the questions to answer were: Do certain food combinations always bring good performance and other combinations poor performance? Does a child respond to a food combination when it is repeated in a way that is superior to the first time he experienced it?

Since definite menus were repeated in each of three years, it seemed possible to obtain rather definite answers to these questions for these children. In 1933-34, 12 different menus were repeated throughout the year, eight to nine times. In 1934-35, 20 menus were repeated

about five times each during the year. While in 1935-36, 25 menus were repeated five to six times throughout the year. The series of menus were not the same for the different years.

If food likes and dislikes are the chief determiners of eating behavior, one would expect that when identical menus were repeated, individual children would repeat their behavior in response. However, an analysis of the table records, too detailed for inclusion here, showed that a child often varied greatly in all three measures for an identical meal served at intervals of three, four, and five weeks. Either in time taken to eat a meal, or the amount eaten, there was at times almost as much variation between two successive occurrences of a menu as during the whole year for the whole series of menus. John was an example of this in the menu of baked heart, spinach, mashed potato, cornbread, and fruit cup. His time for this meal ranged from 27 to 71 minutes and the amounts eaten from 13 to 30 units, while the range for the year in time was 27 to 82 minutes and in amounts was 10 to 42 units. Another meal of goldenrod eggs, green beans, baked potato, toast, and diced bananas in orange juice, varied in amounts from 13 to 41 units, again almost the extremes shown during the year. A variable response to identical meals served at different times was shown by all the children.

However, when the measures for each menu were averaged, they indicated that some of the menus did make a difference in the children's performance. When a child's average performance on a given meal was outside or near the limits of his standard deviations in time, amount, or efficiency, it seemed fair to infer that that menu was exceptional for him. Either he ate it unusually promptly, in larger amounts, or with high efficiency, or with just the opposite of these types of behavior. Such meals, in contrast to the majority of menus, were outstanding in predictability for an individual; usually he showed either superior or inferior performance when they were served. Obviously, liked or disliked food in these meals was conditioning the performance of the children.

Not only did several menus bring distinctly superior or inferior reactions from an individual child, when his times, amounts, and efficiencies were averaged, but a few menus each year obtained outstanding responses from several children. Some menus gave several children particular difficulty, while with others several children did exceptionally well. In addition, there were a few menus each

year which showed ambiguous responses, a few children doing very well with them and a few whose average performance was very poor.

Perhaps there would have been a more definite response to all of the menus had they not been based on previous experience with feeding preschool children. Efforts were made by the nutritionist to plan food combinations which would be attractive and to have the food prepared so as to facilitate eating.

The other question was whether a child would show learning in eating a combination of foods when they were served to him at definite intervals. If learning to eat is like other learnings, one might expect that each time a specific meal was served, the children would do increasingly better—more food eaten in relatively less time, therefore more efficiently. Each child's records were examined on the individual menus to see whether he showed improvement in any of the measures with each successive time that he experienced a meal. Table 9 indicates the changes in the different measures with successive appearances of identical meals.

TABLE 9

PROGRESS IN LEARNING TO EAT COMBINATIONS OF FOOD

Change in behavior	Time		Amount		Efficiency	
	"Good"	"Poor"	"Good"	"Poor"	"Good"	"Poor"
	Per cent of meals					
	From first to second times menus were served					
Improved	45	48	62	61	54	51
Same	8	4	6	7	5	4
Lost	47	48	32	32	41	44
Total	100	100	100	100	100	100
	From second to third time menus were served					
Improved	46	50	46	54	49	58
Same	7	4	6	8	2	4
Lost	47	46	48	38	49	38
Total	100	100	100	100	100	100
	From third to fourth time menus were served					
Improved	63	44	43	51	60	56
Same	6	3	5	5	4	2
Lost	31	53	53	44	36	42
Total	100	100	100	100	100	100
	From first to last time menus were served					
Improved	50	58	54	60	50	66
Same	5	3	6	9	4	4
Lost	45	39	40	31	46	30
Total	100	100	100	100	100	100

From the first to the second time that a menu was served, the trend of the children was to show improvement in amounts of food eaten and in efficiency, with more improvement being shown by the "poor" eaters in these measures. Both groups, on the other hand, showed about as much loss as gain in promptness.

From the second to third times the menus were served, the "good" eaters regressed and improved about equally, but the "poor" eaters were still improving in amounts and efficiency and time of eating as well.

From the third to fourth times the menus appeared, the "poor" eaters were still progressing in amounts and efficiency, but showed a slight loss in time. At the same time, the "good" eaters were progressing in time and efficiency, but showing a slight loss in amounts.

When the first times the meals were served are compared with the last times, the trends of the two groups are more clearly shown. Progress in all of the measures was shown by both groups, slight for the "good" eaters, marked for the "poor." In both groups more progress was shown in increasing amounts than in increasing promptness. And the relationship between amounts eaten and time of eating—in other words efficiency of eating, showed the most improvement by the "poor" eaters, thus adding further evidence to the fact that more learning was shown by the group which had most need to learn.

In summary, it may be said that sometimes the combination of foods offered a child was the critical factor in determining his eating performance. However, more often than not, the menu seemed to play little part in determining what the eating response would be. Apparently other factors were also contributing to vary his eating behavior. Some of the types of behavior related to nutrition and health, such as sleep, elimination, growth, have been studied at Cornell (27) and other studies are in progress.

When the effects of practice on definite food combinations were observed, it was apparent that both groups showed improvement with repetitions of the same meals. The "poor" eaters, however, showed more improvement in all of the measures. In both groups, amounts tended to improve first and most, and later time or promptness of eating. The improvement in either of these measures, of course, brought accompanying improvement in eating efficiency.

e. Successive performances on same foods. Not only was it possible to study the various children in their learning to eat certain meals, but it was also possible to study their learning to eat individual foods which they disliked. On the table records, the teacher included not only the amounts of food served, the second servings which the children gave themselves, but also the order in which the foods were eaten. Thus there were two ways of determining a child's progress in learning to like a food: the order in which it was eaten and the amount of second serving which he gave himself. Both of these methods have been used by other investigators. Vance (41), in a study of food preferences of preschool children, noted that children tended to finish the foods on their plates in the order in which those foods were first tasted. In another study of food selections (42), he used the order of eating foods as the basis for his observations that vegetables are not so popular with nursery school children as bacon, sandwiches, etc.

In a study of children's choices of food, Sanders (33) found her children choosing protein foods first more frequently than vegetable foods.

Husband (23) concluded that the order of eating and tasting was not as adequate a criterion of liking as requests for second helpings. On this basis she found that the five foods most preferred by the 36 nursery school children observed were beef and lamb stew, wax beans, tomatoes, and liver and bacon. Stewed foods were most preferred and creamed foods least preferred.

Both measures for likes were used in this study. Before the children entered nursery school, the parents filled out a list of about 50 foods ordinarily served at nursery school, stating whether these were liked or disliked by the child, or had never been served to him. Thus, whenever a disliked food was served, it was noted by the nutritionist on the child's table record, so that the teacher could be prepared to give minimum first servings and extra help if necessary. The reported foods disliked by these 20 children when they came to nursery school are indicated in Table *D*.

As to the number of foods disliked by the children in the two groups, a difference was evident. There were more of the "good" eaters who had no dislikes at all, and there were more of the "poor" eaters who showed more than four dislikes of these common foods. Table 10 indicates that from a list of 50 common foods there were

TABLE *D*

Food	Number of children disliking
Liver	6
Milk	5
Rice or tapioca pudding	4
Onions	3
Eggs	3
Peas	3
Carrots	2
Spinach	2
Cabbage	2
Squash	2
Gelatin	2
Tomatoes	2
Prunes	1
Pears	1
Oranges	1
Apples	1
Apricots	1

TABLE 10

DISTRIBUTION OF CHILDREN AS TO NUMBER OF FOODS DISLIKED

Number of dislikes from 50 common foods	Number of children "Good" eaters"	"Poor" eaters
0	4	1
1	1	1
2	–	3
3	3	1
4	1	1
5	1	2
6	–	–
7	–	–
8	–	–
9	–	1
Total number of dislikes	19	33
Average number per child	1.9	3.3

19 occurrences of disliked foods among the "good" eaters against 33 among the "poor" eaters.

When the foods were listed which the various children had never experienced before they came to nursery school, the two groups were again differentiated. The "poor" eaters had a more limited experience with food than the "good" eaters. Table 11 shows that from the 50 common foods there were approximately 70 occurrences of foods new to the 10 "good" eaters and about 110 to the "poor"

TABLE 11

DISTRIBUTION OF CHILDREN AS TO NUMBER OF FOODS NEVER EXPERIENCED

Number of 50 common foods never experienced	Mid-point	Number of children "Good" eaters	"Poor" eaters
0- 4	2	7	–
5- 9	7	4	6
10-14	12	3	2
15-19	17	–	–
20-24	22	–	1
25-29	27	–	–
30-	32	–	1
Approximate total number new foods		70	110
Average number per child		7	11

eaters. In other words, 14 per cent of the 50 common foods offered were new to the "good" eaters and 22 per cent to the "poor."

It may seem surprising that the two groups did not vary more than this in the question of food likes and dislikes and former experience. Members of both groups had barriers to learning at dinner in the form of hearty dislikes, and many common foods which they had never tasted. In general, however, one feels that the difference is probably one of appetite rather than specific food preferences and aversions. As one mother said of a "poor" eater when she made out her list, "In checking the word 'likes,' I do not mean to any remarkable extent."

The process whereby a child passes from difficulty to ease and enjoyment in eating a food which he once refused is complicated to study. It is always difficult to tell just when the food loses its negative value and becomes acceptable. Studies at Merrill-Palmer (38) indicate that by the fourth time a new food is served, a child usually eats it without protest or urging. The present study also suggests that with several repetitions, a new or disliked food is gradually eaten with ease and ultimately as a rule with liking. In Table *E* are a few of the records of children in their learning to eat foods which they did not like, with indications of the changes in order of eating among the five dinner foods offered and the amounts of second servings.

In summarizing the learning of these children to eat disliked foods, it is evident that with the small first servings (one tablespoon of

TABLE *E*

Date	Order	Amount second serving	Remarks
		Earl, creamed peas	
Nov. 28	?	0	1 teaspoon only, served
Dec. 19	5	0	1 tablespoon served
Jan. 23	5	½ tablespoon	½ tablespoon served. He let
Feb. 20	3	1 tablespoon	first bite drop on floor
Mar. 6	5	3 tablespoons	Did not reject for first time
Mar. 27	2	0 tablespoon	
Apr. 24	?	4 tablespoons	
May 15	?	4½ tablespoons	Ate hungrily and promptly, excellent appetite
		Earl, broiled liver	
Nov. 23	?	0	Made face but put in mouth
Dec. 21	4	½ tablespoon	
Jan. 25	?	0 tablespoon	
Feb. 8	?	½ tablespoon	Gagged but retained it
Mar. 1	2	3 tablespoons	
Mar. 8	3	3 tablespoons	
Mar. 22	1	4 tablespoons	

*Barton, one cup milk**

Time served	Order	Remarks
1	4	
2	5	
3	5	(Tantrum over second part of milk.)
4	5	("Make milk all gone," brought reiteration of "no" as of yesterday.
5	?	Taking milk then sandwich was
6	?	effective.)
7	2	(Asked for more milk after full 8 ounces was gone.)

*No amount for second serving was included for milk, since one cupful was served with each dinner; one-half cup with first serving of dinner, one-half cup with the second serving.

solid food) as they recurred with the regular repetition of the menus and with some pressure and help on the part of the teacher, the children gradually came to accept the food, often with enjoyment and satisfaction. Sometimes only two or three successes in eating a disliked food were enough to change the attitude of the child toward it, though certain children with certain foods did not develop a genuine and independent acceptance until after a dozen or more experiences. It is impossible from this study to make a generalized statement of how many times it is necessary to serve a disliked food in order to have it accepted. It is true, however, that many of

these children were well started in learning to accept a disliked food by the fourth time it was served under the conditions at nursery school.

As a single measure, the order of eating seemed to be an uncertain method of judging a child's liking for a food. The amount of second servings was not always an adequate measure, for that was sometimes the result of teacher pressure and this fact may not have been noted on the table records. However, when second servings increased with each successive time that a new or disliked food appeared and the child was eating it in second or third order instead of leaving it until last, the combination of the two observations points to an accomplished learning to accept or even to like the food.

3. *Developmental Factors Which May Condition Learning*

It is always of value to know the background, the condition and the type of subjects whose learning is being observed for in some of these may be found factors which are strongly conditioning the behavior of the learners. The fact that the children in the group of "poor" eaters had more learnings to accomplish in the way of new and disliked foods suggests that there might be other important differences between the two groups. Observations by other investigators are referred to below:

Schultz (34), in studies of chronic anorexia, stressed the body type of the child:

> Chronic anorexia is seldom if ever encountered in the child with rugged physique. . . . The subject presenting this disorder is commonly thin, gracile, pale and transparent and usually is decidedly underweight. Functionally, he is definitely below par, as is evidenced by the ease with which any dysfunction can be produced and the almost immediate reaction of fatigue to any considerable demand on his physical energy.

Lucas and Pryor (24) studied 110 children complaining of anorexia, classifying their children as linear, lateral, and intermediate. In this group, 82 per cent of anorexia children were linear and obstinate constipation had a high correlation with lack of appetite. Fatigue, irritability, and poor muscle tone were characteristic. Psychological examinations of a number of his children with anorexia indicated intelligence higher than average.

Among Borgeson's (7) children:

> The seven who ate most poorly (the dawdlers) tended to have less vigorous health, for they seemed often to be fatigued, and they had colds more often during the year; they seemed to show a feeling of insecurity and lack of self-confidence and independence; they looked for attention and showed a willingness to let the teacher help them or do the tasks for them. They tended to be somewhat higher on the whole in intelligence as measured by *IQ* tests than the rest of the children of whom mental measurements were taken, although there were too few cases to consider this difference significant.

In the younger group of children studied by Thurston (39), the more slender children tended to take longer times at dinner than the stocky ones, although there seems to have been no note taken of the amounts of food eaten by the two types.

Of the 349 cases of anorexia analyzed by Bartlett (4), 35 per cent had no discoverable lesions to account for the condition, and he classified these as functional. The commonest pathological conditions associated with anorexia were: septic tonsils and adenoids, acute infectious diseases, tuberculosis, pyelitis, and dental caries.

Some of the differences found between the two groups in this study are briefly summarized.

a. Mental development. The question of chronological age has already been mentioned, and in this respect the two groups were about equal. As for mental development, there was a slight indication that the "good" eaters tended to be in the higher percentiles and the higher *IQ* intervals on the Merrill-Palmer performance tests as indicated in Table 12. Six of the 10 "good" eaters had

TABLE 12

DISTRIBUTION OF CHILDREN AS TO PERFORMANCE IN MERRILL-PALMER TESTS

IQ scores	Number of children "Good" eaters	"Poor" eaters	Percentiles	Number of children "Good" eaters	"Poor" eaters
90- 94	1	1	30-39	1	1
95- 99	1	–	40-49	1	–
100-104	–	2	50-59	–	–
105-109	1	2	60-69	–	2
110-114	1	3	70-79	–	2
115-119	2	–	80-89	1	3
120-124	2	1	90-99	7	2
125-129	1	1			
130-134	1	–			

IQ's of 115 and above while only two "poor" eaters had scores this high.

b. Physical development. In physical development, the "good" eaters also seemed to have somewhat of an advantage over the other group. There was a tendency for the "good" eaters to weigh more at the beginning of school, to show a higher percentage over their average weights in relation to heights, and to have higher weight-height indexes. In height, however, there was little difference between the two groups. Tables 13, 14, 15, and 16 show these trends.

c. Growth during year. The rate of growth during the year might strongly condition children's learnings at dinner, if one as-

TABLE 13

DISTRIBUTION OF CHILDREN AS TO WEIGHT AT BEGINNING OF SCHOOL

Weight Pounds/ounces	Number of children "Good" eaters	"Poor" eaters
24-26/15	1	–
27-29/15	1	4
30-32/15	3	5
33-35/15	3	1
36-38/15	1	–
39-41/15	1	–

TABLE 14

DISTRIBUTION OF CHILDREN ACCORDING TO HEIGHT AT BEGINNING OF SCHOOL

Height in inches	Number of children "Good" eaters	"Poor" eaters
33-35.9	3	3
36-38.9	6	7
39-41.9	1	–

TABLE 15

DISTRIBUTION OF CHILDREN ACCORDING TO WEIGHT-HEIGHT INDEX AT BEGINNING OF SCHOOL

Weight-height index	Number of children "Good" eaters	"Poor" eaters
80-84	3	6
85-89	–	3
90-94	5	1
95 and more	2	–

TABLE 16

DISTRIBUTION OF CHILDREN ACCORDING TO PERCENTAGE OVER OR UNDER AVERAGE WEIGHT FOR HEIGHT AT BEGINNING OF SCHOOL

Percentage over or under average weight for height	Number of children "Good" eaters	"Poor" eaters
—5- —1	1	2
0- 4	1	5
5- 9	3	2
10- 14	4	–
15 and more	1	1

sumes that the more rapidly growing children would have stronger drives toward food. Since the children, without shoes or clothing, were measured for height once a month and weighed once a week by the school nurse, it was possible to compute the rates of growth.

To determine the average gain per week, the number of ounces gained by each child during the year was totalled and divided by the number of weeks covered by the weighings. Likewise, the inches gained during the year were divided by the months covered by the measures, to determine the rate the children grew in height per month.

Table 17, giving the distribution of the two groups according to

TABLE 17

DISTRIBUTION OF CHILDREN ACCORDING TO AVERAGE GAIN IN WEIGHT PER WEEK DURING SCHOOL YEAR

Ounces gained per week	Number of children "Good" eaters	"Poor" eaters
1.00-1.49	2	3
1.50-1.99	4	3
2.00-2.49	3	4
2.50-2.99	1	–

TABLE 18

DISTRIBUTION OF CHILDREN ACCORDING TO AVERAGE GAIN IN HEIGHT PER MONTH DURING SCHOOL YEAR

Inches gained per month	Number of children "Good" eaters	"Poor" eaters
.20-.24	6	4
.25-.29	3	4
.30-.34	1	2

their average weekly gains in weight, indicates no significant difference between the two groups. The same is true for Table 18, showing the average gains in heights. Apparently the two groups were growing about equally.

d. History of breast feeding. In relation to the physical condition and constitution of the children, it is interesting to note how the two groups varied in regard to breast feeding. Sander's (33) study suggests that "the child who has been nursed for the usual period of time as a baby may be a better feeder as a preschool child." Table 19, however, shows no significant difference between these two groups of children.

TABLE 19

DISTRIBUTION OF CHILDREN ACCORDING TO NUMBER OF MONTHS OF BREAST FEEDING

Breast feeding Number months	Number of children "Good" eaters	"Poor" eaters
No information	–	1 (Barton)
0	2	3
¼ to 1	3	2
2	–	–
3	2	–
4	–	1
5	2	3
6	1	–

e. Reasons for absence from nursery school. To answer the question of whether the "good" eaters were more healthy as a group than the "poor" eaters, the attendance book kept by the nurse of the nursery school was consulted. Here the days absent from school were recorded and the causes for the absences as given by the parents.

The heading "Colds" included coughs, croup, sore throat, and all types of respiratory infection. "Digestive upsets" included indigestion, regurgitation, diarrhea, and complaints of the alimentary tract. Absent for "observation" refers to those days on which a child is kept at home because of suspicion of a cold or some other illness which does not develop. Diseases and infections other than colds are self-explanatory; the three types which occurred among these children were German measles, cystitis, and pink eye. "Non-health" reasons for absence included absences at those times when it was inconvenient to bring a child to nursery school.

(1). *Colds.* There is some difference between the two groups in the question of absences caused by colds. Among the 10 "good" eaters there were 48 colds and among the 10 "poor" eaters there were 42 colds, lasting in both groups on an average about four days each. In the group of "good" eaters, more of the total absences, 83 per cent, were caused by colds than in the group of "poor" eaters which had 69 per cent. Therefore, in both percentage and actual numbers of colds, the "good" eaters tended to have more than the "poor" eaters.

(2). *Digestive upsets.* With absences caused by digestive upsets, the tendency was the opposite way. Only three of the "good" eaters had digestive upsets, totalling four incidents for the group, while eight of the "poor" eaters had digestive difficulties during the year which kept them at home, a total of 13 episodes for the group. Both in percentage and in actual number of upsets, the "poor" eaters tended to have more digestive difficulty than the "good" eaters.

(3). *Diseases and infections.* As for contagious diseases and infections other than colds, there were two cases of German measles among the "poor" eaters. The subject of one of these also had cystitis and the other the pink eye, while one of the "good" eaters also had German measles. The "poor" eaters lost 16 days of school, or six per cent of the total absences because of disease and infections, while the "good" eaters lost only three days or one per cent of the total absences. Therefore, both in percentages and actual days of absence, there was a tendency among these children, for the "poor" eaters to have more disease and infection, though both groups were relatively free. Table 20 briefly indicates these results.

In summary, it is interesting to note that the per cent of possible days at nursery school on which the children of the two groups were absent is almost equal, i.e., 18 per cent for the "good" eaters and 19 per cent for the "poor" eaters. The per cent of days absent from school because of illness is also nearly equal for the two groups—15 per cent for the "good" eaters and 16 per cent for the "poor" eaters. However, the two groups varied in the causes for their absences, the "good" eaters having a higher proportion of absences caused by colds than the "poor" eaters, while the latter group had a greater proportion of absences caused by digestive upsets and by other infections and diseases. The "poor" eaters were absent

TABLE 20

REASONS FOR ABSENCE FROM NURSERY SCHOOL

	Per cent of school days absent		Per cent of total absence caused by:					
			Colds	Digestive upsets	Disease infections	Observation	Non-health	Total
	All reasons	Sickness						
"Good" eaters	18	15	83 (208 days)	2 (5 days)	1 (3 days)	11 (26 days)	3 (8 days)	100
"Poor" eaters	19	16	69 (184 days)	12 (31 days)	6 (16 days)	8 (21 days)	5 (15 days)	100

twice as often for non-health reasons as the other group, but they were not detained for as much "observation."

The digestive difficulties of the "poor" eaters might be explained in either of two ways. Perhaps, as some writers have suggested, these children are not up to normal in their mechanics of digestion, or else, because they are poor eaters, adults tend to hurry or to encourage these children to eat amounts of food beyond their capacity.

Another paper (*27a*) reports further differences between these two groups in development and behavior related to nutrition.

IV. SUMMARY AND CONCLUSIONS

Some of the literature concerning the eating behavior of preschool children has been reviewed, indicating that: (*a*) Eating is a frequent difficulty among children of this age. (*b*) One of the common theories followed in feeding children, is to strictly supervise and require fixed amounts of certain foods. (*c*) Some pediatricians and psychologists, however, attribute the prevalence of anorexia and feeding difficulties to such feeding practice and recommend in contrast, letting the child's own appetite and individual likes determine the food that he eats. (*d*) The philosophy expressed by many students of child psychology and followed by the staff of the nursery school at Cornell is to consider meal time as a learning situation for children. (*e*) The learning of good habits and attitudes toward eating is considered of extreme importance by many psychologists, not only from a physical standpoint, but from the standpoint of mental health, personality traits, family relationships, and psychological adjustments to the child's environment. They point out that the taking of food constitutes one of the most important of his earliest experiences, and may determine whether he starts his life career with satisfaction or annoyance.

A. Techniques of Measuring Learning

Three objective measures of eating behavior made it possible to study the learning of children at dinner. These included: (*a*) the time in minutes taken by each child at each meal; (*b*) the amount of food eaten at each meal, estimated in arbitrary units; (*c*) the efficiency of eating—a score based on the relationship of the time taken to eat and the amounts eaten.

B. Learning of Ten "Good" Eaters and Ten "Poor" Eaters

A study was undertaken of the learning of 10 "good" eaters and 10 "poor" eaters to eat dinner at nursery school. These children were selected from the enrollment of three different years. The "good" eaters were the children showing the highest efficiency scores the first month of nursery school, and the "poor" eaters were those showing the lowest efficiency scores the first month of nursery school. There were 924 meals for the "good" eaters and 899 meals for the "poor" eaters, making a total of 1,823 meals for the two groups which were studied.

1. *Comparison of Two Groups' Status During Year*

Not only during the first month, but during the course of the year there was a clear difference between the "good" eaters and the "poor" eaters in all of the measures, the performance of the "good" eaters being superior in each respect to that of the other group. Table 21 gives a summary of these measures.

TABLE 21

SUMMARY OF EATING BEHAVIOR DURING YEAR BY GROUPS AND CONDITIONING FACTORS

	Group of ten "good" eaters	Group of ten "poor" eaters
Average efficiency of eating and standard deviation	89 ±10	74±11.5
Average time and standard deviation, minutes	40 ± 9.6	51±10.3
Average amount and standard deviation, units	28.5± 5.9	24± 6.2
Average number per child of fifty foods never experienced	7	11
Average number per child of fifty foods disliked	1.0	3.3
Average age of children, months	30.1	30.2
Average Merrill-Palmer percentile	80-89	70-79
Average *IQ* in Merrill-Palmer test*	114	109
Average weight, beginning school, pounds	32.6	30.3
Average height, beginning school, inches	36.9	36.2
Average gained weight, per week, ounces	1.79	1.84
Average gained height, per month, inches	.25	.25
Average number months breast fed	2.3	2.2
Per cent school days absent, all reasons	18	19
Per cent school days absent, sickness	15	16
Per cent absence, colds	83	69
Per cent absence, digestive	2	12
Per cent absence, other diseases	1	6

*Median *IQ*'s were in the intervals of 115-119 for the "good" eaters and 105-109 for the "poor" eaters. See Table 12.

In time, the "good" eaters ate in an average of 40 minutes with a standard deviation of 9.6 minutes, while the average time of the "poor" eaters was 51 minutes with a standard deviation of 10.3.

In amounts, the mean of the "good" group was 28 units with a standard deviation of 5.9. The mean of the "poor" eaters was 24 with a standard deviation of 6.2.

In efficiency, the mean of the "good" group was 89 with a standard deviation of 10, while the mean of the "poor" group was 74, with a standard deviation of 11.5.

The variability of both groups in these measures was high, with the "poor" eaters tending to be somewhat more variable in each respect than the "good" eaters.

Some overlapping was shown between the two groups, a few of the "poor" eaters doing as well as some of the "good" eaters.

2. *Comparison of Two Groups in Learning During Year*

When the records for the individual children were studied in chronological order, it was possible to see the changes in the different measures. Fluctuations from day to day made it difficult to see progress. Therefore, from each 25 meals, those with measures which were better than average were charted. The increasing number of these better meals indicated progress in learning to eat dinner at nursery school. Though improvement was not steady in either group, all of the children showed improvement by the end of the year in at least one of the measures and some improved in all three.

The tendency was for the "poor" eaters to improve fairly consistently in efficiency and in the amounts eaten, while the "good" eaters, who were higher in initial efficiency, tended to lose slightly in efficiency while increasing their amounts.

In both groups of children, the improvement in the measures usually occurred first in amounts of food, which was often accompanied by a loss in the number of meals which were eaten promptly. Apparently an equilibrium between amounts of food eaten and time taken for eating was disturbed, so that when the quantity of food was increased, the time of the meal was lengthened disproportionately.

When the children's measures the first month of nursery school were compared with those of the last month, progress in learning was again evident.

a. Amounts and time. Scattergrams indicated that for most of these children it was impossible to see a consistent relationship between the amounts eaten and the time required for eating. However, a tendency was evident in the group of "good" eaters for more

of these children to take a short time to eat a small meal and a long time to eat a big meal. Also in the group of "good" eaters there was less of the undesirable learning shown of small intakes requiring long times.

b. Combination of food. Each year, during which these children were studied, sets of menus were repeated over and over, so that it was possible to see whether a particular child's performance was conditioned by the food which he was offered, and whether he showed progress with successive experiences of a food combination.

This study indicates that many of the nursery school menus seemed to have little effect on the eating behavior of an individual child. He might give his best performance on a certain meal one time, and at a later time when that same meal was served, do his worst.

On the other hand, there were a few menus each year which did seem to affect the performance of an individual child. A few meals were even predictable for several children as to whether they would result in very poor or very good eating behavior. Several menus, however, gave ambiguous results, with some children doing very well and others poorly when these meals were served.

From the first to the second time that a menu was served, the trend of the children was to show improvement in amounts of food eaten and in efficiency, with more improvement being shown by the "poor" eaters in these measures. From the second to third times the menus were served, the "good" eaters lost and gained about equally in the different measures, but the "poor" eaters were still improving in amounts and efficiency and time of eating as well.

When the first times the meals were served are compared with the last times, progress in all the measures was shown by both groups, slight for the "good" eaters and marked for the "poor." In both groups, more progress was shown by increasing amounts than by increasing promptness.

c. New and disliked foods. From records filled out by the parents before the children entered nursery school, it was evident that both groups of children had hearty dislikes, and many foods served at nursery school were strange to them. However, among the "poor" eaters there was a larger number of disliked foods and less experience with a variety of foods. Repetitions of a disliked food gradually brought an acceptance of that food and as a rule apparent satisfaction in eating it.

The order of eating seemed to be an uncertain method of judging a child's preference, but when considered in relation to the voluntary second servings, the combination was thought to be an adequate indication of a child's attitude toward a food.

3. *Comparison of Two Groups in Developmental Factors Which May Condition Learning*

Table 21 gives a summary of some of the variations between the two groups of children in their eating behavior during the course of the year, and developmental history which may have conditioned their learning.

In chronological age, there was little difference between the two groups.

In mental development there was a slight indication that the "good" eaters were in the higher percentiles of the Merrill-Palmer performance tests.

In physical development at the beginning of school the "good" eaters appeared to have an advantage: (*a*) In weight, the "good" eaters tended to weigh slightly more at the beginning of school. (*b*) In height, there was little difference between the two groups. (*c*) In weight in relation to height, the "good" eaters tended to have higher weight-height indexes—to be better developed for their height. (*d*) In percentage over or under average weight for height and age, 80 per cent of the "good" eaters were five per cent or more above the average for their heights, while 70 per cent of the "poor" eaters tended to be only four per cent or less above the average for their heights.

In growth, the "poor" eaters were gaining weight as rapidly as the "good" eaters and in height the two groups were also growing about equally.

In the number of months of breast feeding, there appeared no significant difference between the two groups.

In the reasons for absence, there were interesting variations between the two groups. The per cent of days absent from school was about the same, as well as the percentage caused by illness. However, the "good" eaters lost more days than the "poor" eaters because of colds, while the "poor" eaters lost more days than the children in the other group because of digestive upsets, diseases, and other infections.

V. IMPLICATIONS OF THIS STUDY

A. The Theory

From the studies of other workers in the fields of child psychology and nutrition and from the experience of the teachers in the nursery school of the New York State College of Home Economics at Cornell, it is believed that the attitude of adults will be more helpful to children if they keep in mind that eating behavior and appetite are partly the results of children's learnings.

Children may have problems of feeding, but when these are recognized as stages of development, often common among children of this age, anxiety of adults, resulting in harmful conflicts and strain for the children, may be avoided.

By following the principles of learning, taking the attitude of a teacher, teaching day by day to taste small amounts of new or disliked foods, serving only what can be easily eaten, making allowances for variations in performance, avoiding distractions at dinner, and making meal time satisfying and enjoyable for everybody, adults may help children through problem stages onto "new frontiers of learning."

B. The Method

It is believed that parents and teachers may find feasible and helpful the measures used in this study,—the length of time at meals, the amount of food eaten, and efficiency scores relating time and amount. Through these objective measures adults can recognize children's progress in the abilities involved in eating. The teachers in the nursery school at Cornell who have used these measures for the last eight years have found them useful in following the development of children's eating ability.

Instead of studying the progress of the children by singling out the meals which are better than average in each consecutive group of 25 records, it might be more satisfactory for regular nursery school use, to chart the percentage of these better meals from the children's records for each month. This would equalize such factors as menus, season of the year, and weather in making comparisons of the progress among the various children for a given year.

C. The Results

Differences between the two groups of children make it appear

that good eating is an aspect of development which goes along with mental and physical advancement. The more advanced organism seems more likely to be a good feeder than not. However, the tendency toward more colds in the group of "good" eaters may indicate that sometimes rapid development has drawbacks. Some parents will also find it encouraging that the "poor" eaters were gaining weight as rapidly as the other group, in fact more rapidly if one considers equal weights added to smaller bodies. The greater number of digestive upsets among the "poor" eaters might suggest that this tendency toward small amounts may be in response to their needs.

Failure to progress by some of the "good" eaters in the measures of eating ability draws attention to the fact that dinner for the children already skilled in eating may lose its challenge as an eating situation and become interesting in other aspects. If an adult feels that a child is ready for more social participation at meal time, she must expect some loss in eating efficiency.

The great variability of children in both groups indicates the impossibility of an adult's accurately gauging a child's appetite for any one meal, and that a great range of behavior is possible and probable. The "good" eater may on certain days do as poorly as the "poor" eater, while the latter in turn may on occasion do as well as the children in the "good" group. This points out how important it is for the adult to allow for leeway in a child's performance from day to day.

The fact that eating behavior is not always determined by the food combination offered, makes it evident that there are other factors which are responsible for a child's appetite which may not be recognized by the teacher or parents.

The fact that a marked increase in amounts of food is often accompanied by a sacrifice in efficiency by lengthening the time of meals, may make one question the advisability of increasing the amount of a meal beyond a child's ability to deal with it effectively. On the other hand, if physical welfare demands an increase of food, the adult must allow the extra time required to consume it, until the child has learned to deal more efficiently with larger quantities. Or else the adult must assume more responsibility for helping the child succeed in eating more and thus avoid the strain and fatigue of a longer meal time.

The value of allowing children some choice in the matter of what they will eat can well be considered by most adults. Not only does it add one more legitimate opportunity for expressing a child's preferences in a life where freedom tends to be continually limited, but it also puts eating in the realm of feeling, as well as of doing and thinking. In our present vitamin-conscious world, the intellectual aspects of eating may crowd out legitimate enjoyment of food. In addition, by respecting a child's preferences after he has fulfilled the requirements of tasting all the foods which the menu offers, the tendency of the adult to put on too much pressure at meal time may be offset.

The negative relationship sometimes evident between the amount of food eaten and the time taken to eat it is worth consideration. The large meal which is promptly eaten indicates a desirable efficiency and a natural satisfaction with the eating situation. On the other hand, the small amount of food which takes a very long time to consume is unnatural, inefficient, unsatisfying, and a learning in the wrong direction. Eating for quantity, and eating promptly may be considered as two separate learnings. When eating promptly, the urge of the appetite and the satisfying of that urge are adequate stimuli to good performance. However, when the pressure from the adult to eat more food is greater than the child's satisfaction in the increased amount, dawdling is a natural escape and an undesirable attitude and habit may be started.

Learning to eat new and disliked foods seems important. In these days of vitamin tablets and mineral pills and the fortification of many common foods such as cereals and milk, parents are asking whether it is worth their effort and the struggle with their children to teach them to chew meat or fibrous foods or to eat carrots and spinach or any other foods which are not liked, just because they are good for children. How much simpler it seems to give a teaspoon of cod liver oil or some yeast candy, and let a child keep his dislikes.

The question is not so easy to answer. Perhaps one can maintain life with such feeding practices. But the fact that all the mysteries of human nutrition are not yet solved—vitamins are still being discovered, mineral requirements are debatable—makes one hesitate to trust the drug store over nature and the foods to which our bodies have been adjusted over long centuries of evolution.

In addition to nutrition and health, there is a psychological and social aspect to the problem. How many hostesses would welcome the person to dinner who has indulged a whimsical appetite? Most of us have had experience with such people and would consider them very trying members of a family or social group.

The habit of sampling new foods and of accepting disliked foods is certainly worth cultivating in childhood. At least an acceptance, these studies indicate, is not so difficult to gain. In later life, a liking of many foods will be a benefit to an individual's health and certainly increase his pleasures of the table.

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STUDIES IN THE INTERPRETATION OF PLAY: I. CLINICAL OBSERVATION OF PLAY DISRUPTION IN YOUNG CHILDREN*

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I. Orientation 559

II. The initial situation and its alternatives 573

III. Studies in play interpretation 587
A. Method of representation 587
B. A six-year-old boy's secret 589
C. A neurotic episode in a girl of three 597
D. Orality in a boy of four 615
E. Destruction and restitution in an "epileptic" boy of four 646

IV. Conclusion 663

References 671

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I. ORIENTATION

The purpose of this monograph is a modest and elementary one. Specimens of a psychotherapist's experience, namely, the observation of the first play enacted by young patients in his office, are reviewed, as it were, in slow motion. Two aspects are isolated as far as clinical material permits: What, to this psychotherapist, are the outstanding attributes of a play observation? What conscious considerations lead him to the "meaning" on which he bases his first diagnostic decisions?

This primitive inquiry marked the initial phase of a study of neurotic episodes and incipient neuroses in the pre-school child.[1] Unfortunately, however, simple purpose does not necessarily make for simple reading; and the concentration on small specimens in a field with such vast connotations and (recently) such general appeal necessitates a rather general introduction.

1.

The problem of play lies at the intersection of a variety of educational and clinical interests. In reaction to an era which hoped to develop virtues in children by clipping the wings of their spontaneity, modern education wishes to develop and to preserve, modern psychotherapy to utilize the benevolent powers which are said to emanate from the child's "creative" activities.

The contribution of psychoanalysis to this development is a singular one. It not only assumes, with others, a vague—self-teaching, self-healing—function in play, it also detects a detailed correspondence between central personality problems and both the content and the form of individual play creations.

The clinical psychoanalysis of play, however, has shared the

[1]The members of the Study Group were Felice Begg-Emery, M.D.; E. H. Erikson; Edith B. Jackson, M.D.; Marion C. Putnam, M.D., in the Department of Psychiatry and Mental Hygiene: and Ruth W. Washburn, Ph.D., in the Department of Child Development, Institute of Human Relations and School of Medicine, Yale University.

methodological limits of other psychoanalytic media with which Freud did not concern himself in detail (as he did with dreams, slips, witticisms, etc.). Their discernible phantasy content is welcome as something vaguely similar to and therefore useful substitutions for memories, dreams, and other media which are not plentiful in contacts with a small child; their *specific variables,* however, (such as, in play, the variables of extension in actual space) have not been considered worth any special methodological consideration. Responsibility for this neglect seems to lie in the same general attitude among psychoanalysts, which induced Freud to complain in regard to the interpretation of dreams, the oldest *via regia* to the human mind: *"Die Analytiker benehmen sich als wäre die Traumlehre abgeschlossen"* (7).

Tenaciously as the clinical worker may cling to standardized habits of interpretations and may try to see by means of a new medium only that which he had learned to see through older ones, his experience is never the same; new variables of changed experience constantly force him to imply new concepts or a different use of old ones. The clinical observer not only shares a particularly elusive *personal* equation with all those who observe with the naked eye and ear. His work also underlies the *practical* equation derived from the necessity to influence sooner or later the very material under observation. Finally, something like a *cultural* equation expresses the influence on his work and thought of his constantly changing function in science and society. Whatever scientific ore, therefore, may be present in the clinical experience (made elusive by technical, personal, practical, and cultural changes) comes to light mainly through the therapist's constant *efforts at making explicit some of the implicit (preconscious) steps of selecting, associating, and reasoning* which constitute his clinical "intuition" at a given time and in a given technique.

This being our object, we shall be forced to risk tiring the reader with details; details which will seem superfluous to the play technician whose optimism is satisfied with short cuts, and senseless to the psychoanalyst who has learned to view pessimistically any attempts at demonstrating psychoanalytic experience to the "outer world."

2.

In adult life (10) *"talking it out"* is the simplest autotherapeutic measure employed during tense periods by individuals who are not too asocial. Religious and psychiatric sects ritualize it in varying degrees by providing at regular intervals an authoritatively sanctioned listener who gives undivided attention and, sworn to neither censure nor betray, bestows absolution by explaining the individual's problem as belonging in a greater religious, ethical, sociological, medical context. The method finds its limitations where the clinical situation loses the detachment in which life can mirror itself and becomes the center of a passionate conflict as expressed in a too dependent (if not sexual) or too hostile attitude toward the therapist. In psychoanalytic terms: the limitation is set by the tendency (especially strong in neurotics) to superimpose one's basic conflicts on every new situation, even the therapeutic one. This leads to a *transference* which temporarily makes the therapeutic situation a disturbing factor in the patient's life. The patient is in resistance; in a war to end all wars, he becomes more deeply embroiled than ever. At this point non-psychoanalytic efforts are given up; the patient, it is said, does not want to get well or is too inferior to comprehend his obligations in treatment. Therapeutic psychoanalysis at this point systematically begins to make use of the knowledge that no neurotic is undivided in his wish to get well and by necessity transfers his dependencies and hostilities to the treatment and the person of the therapist; in revealing these "resistances" he points the way to *his* treatment.

"To play it out" is the most natural autotherapeutic measure childhood affords. Whatever other rôle play may have in the child's development (and I do not think that these rôles are adequately known), the child also uses it to make up for defeats, sufferings, and frustrations, especially those resulting from a technically and culturally limited use of language. This, the "cathartic" theory of play is one of the many play theories, all of which agree only in assuming an untimely tension. If not a *catharsis* for excessive (traumatic) stimulation in the past, play is considered the expression of a *surplus energy* for which there is no more "practical" use at the moment; with untimeliness projected into phylogenetic dimensions, play becomes a *recapitulation* of (now useless) phylogenetic

leftovers or the *preparatory* expression of what in the future will be useful activity.

In Spencer's classic words, wherever circumstances allow or suggest play, those tendencies are *"simulated"* which are *"unusually ready to act, unusually ready to have their correlative feelings aroused"* (14), (but at the same time are *not any more* or *not as yet practicable* in connection with their real goal).

Of all organisms the human child is probably the one who has to learn to postpone temporarily and permanently the most formidable array of tendencies which because of his slow maturation and his higher aspirations are precocious or definitely out of place. Some of them (as Freud has recognized in neurotics) remain "unusually ready to have their correlative feelings aroused" throughout life. Our new knowledge of such unconscious and subverbal "readinesses" gives the previous theories of play a new and specifically human meaning. In all its slow maturation and long defenselessness, the human child, so we learn, lives through periods of diffuse, culturally and biologically impracticable impulses of a sensual and aggressive nature, which he cannot help attaching to the narrow circle of his very originators, protectors, and educators—his family. The task of maturation, then, is to outgrow in the most constructive manner these premature emotional and instinctual attachments while outgrowing the need for protection. But this is a slow and partly indefinite process; and the human animal not only plays most and longest, it also remains ready to become deadly serious in the most irrational contexts.

Modern play therapy is based on the observation that a child made ambivalent and insecure by a secret hate against or fear of the natural protectors of his play (family, neighborhood) seems able to use the protective sanction of an understanding adult, in professional elaboration the play therapist, to regain some play peace. The most obvious reason is that the child has the toys and the adult for himself, sibling rivalry, parental nagging, and routine interruptions do not disturb the unfolding of his play intentions, whatever they may be.

The observing adult's "understanding" of such play, then, is a beneficial factor even where it finds only an intangible minimum of expression in the child's presence, while its value for an indirect

use in advice and guidance can hardly be over-estimated. The peace provided by solitary play or by play in the presence of a sympathetic adult often radiates for some time, often long and intensively enough to meet the radiation of recognition and love from some source in the environment, a necessary factor in all psychological cures. The chances therefore seem better where the mother too has an opportunity to relieve in conversations her ambivalence toward the child and is prepared to respond to his improvement.

As we shall demonstrate, however, the phenomenon of *transference* in the work with the playing child, as well as with the verbalizing adult, marks the point where simple measures fail, namely, when an emotion of such intensity as to defeat playfulness forces an immediate and only thinly-veiled discharge into the play and into the relationship to the play observer. The failure is characterized by what is to be described in this monograph as *play disruption,* i.e., the sudden and complete or diffused and slowly spreading inability to play.

Recent work in this country has emphasized the alternatives of "passivity" or "activity" on the part of the play observer, the extreme passive attitude representing a certain seductive lifelessness, a kind of play hostess attitude, the extreme active one an animated encouragement of the child to "release aggression" against toys named after members of the child's family. Where a child can follow this latter suggestion without immediate or delayed play disruption we have no reason to be worried about the child, although the "release" theory implied in such procedures seems tenable only in clearly "traumatic" cases and there only theoretically, as the thorough analysis of such cases shows. The clinical problem seems to be solved only by the establishment of permanent and sufficient every day release channels and not by a momentary release under special conditions. Much of this "release" ideology as well as certain forms of purely symbolic and purely sexual interpretation seem to be a revival of the most primitive techniques of the early psychoanalysis of adults—now transferred to the new field of play therapy.

Those children who transfer not the solution but the insolvability of their problems into the play situation and onto the person of the observer need to be induced by *systematic interpretation* to reconsider, on a more verbal level, the constellations which have

overwhelmed them in the past and are apt to overwhelm them when re-occurring. Where *this* goal is given, child psychoanalysis begins.

Child analysis proper, in the cases which are its domain, seeks to provide the child with opportunity for catharsis only in the frame of an intimate therapeutic contact in which *repeated interpretation* furthers the *verbal communication* of inner dangers and the establishment of a *supremacy of conscious judgment* over unmanageable or incompletely repressed tendencies. To interpret means to reveal to the patient, at a *dynamically specific moment,* meanings which he can fully admit to himself only under the guidance of the therapist. Such interpretation is impossible without a technique which systematically and consistently reveals the *dynamics of the developing therapeutic situation,* especially the forces of transference and resistance. Its application is useless or dangerous where there is not time enough to follow the patient and to give new interpretations until a lasting ability is secured to express in a more conscious and social, more humorous and more useful manner that which he first could only admit to verbalization under the guidance of a therapist. Interpretation waits for a specific moment; it needs preparation and after-treatment; it does not claim success until a general and lasting increase of constructive vitality seems secured.

As the treatment proceeds and as the child's verbal powers increase, play observation loses much if not most of its exclusive importance. For the age group reported, however, the investigation of the child's play is a natural first step which coincides with the first step of a variety of treatments; while it can be abandoned or deferred without damage, it can also be pursued and developed without break.

3.

As stated above, this monograph demonstrates the analytic method merely in so far as it permits one to locate through play observation the approximate "seat" and extent of an emotional disturbance before definite clinical procedure is decided upon. This procedure may or may not be child psychoanalysis. Only in the last case to be reported will an effort be made to demonstrate the function of therapeutic interpretations. I should like, however, at least in

the introduction, to transgress the scope of this monograph and to indicate briefly some views in regard to the wider problem of psychoanalysis.

Psychoanalysis, besides being a psychotherapeutic method, is a method of research, a system of psychological and "metapsychological" concepts and a social phenomenon. It rests on observation, on speculation, and on professional organization.

Freud's unconventional eye gave *clinical observation* a new focus and a new scope. The new focus was neurotic man at the intersection of nature and culture, the scope so vast that the neurologist Freud, in conceptualizing the peculiar logic of a neurosis, found himself referring to such seemingly and academically remote phenomena as the primitive's superstition, the child's wishes, the artist's imagination. However, in doing so Freud painstakingly emphasized the fact that the everyday basis of his expanding system was and remained the observation of the forces most clearly operating in the clinical situation; namely, transference, resistance, repression, regression, etc. The clinical observer of a verbalizing adult sees his personality outlined in the way in which his feelings, memories, hopes, etc., do or do not cross the threshold of verbalization, once this threshold is emphasized by the suggestion to associate freely. He has to evaluate a *dynamic scale* of representations, on which a single idea or complex of ideas alternately appears remembered, re-enacted, dreamt, avoided, projected on others, repudiated, joked about, etc., each time with specific *disguises* and *omissions* and accompanied by a *specific quantity and quality of awareness.*

Psychoanalysis emphasizes the fact that the non-clinical fields such as psychology, anthropology, child development, etc., overlap one another precisely in as far as they are psychological. This could be demonstrated either by a changing of focus of their own methods, which would make it possible to find in their material the facts which Freud found in his neurotics, or by an adaptation of the psychoanalytic method to their material, i.e., through methods which use in these non-clinical situations whatever forces in them correspond to the clinical forces of resistance, regression, and transference.[2]

Thus one will see how individuals and groups defend themselves

[2]For example, the anthropological observer with psychoanalytic training learns to understand, one is tempted to say, the *culturality of a cultural*

against ideas and needs which are considered dangerous to the commanding ideas and needs of their reality, and how the *suppressed, the expressed, and the aspired to are interwoven.*

In the application of psychoanalysis to the study of children, the variations in the individual's quantity and quality of verbalized awareness obviously cannot provide the proper dynamic scale because children, on the whole, cannot obey the rule of free association. Of the scales to be applied instead, two will be elaborated in this monograph, namely, the correlation of the individual's *verbal* behavior with his *spatial* expression and his recognizable changes of *affect*.[3]

There are a number of facts which, for better or worse, are constantly re-established by daily psychoanalytic experience: the discrepancy between the representation in verbalized consciousness and the motivating power of certain ideas (repression); the priority among these ideas of those concerning the child's first bodily (sexual) orientation in the world of physical and social facts; their disguised expression in various metaphoric ways; the sexual deficiencies and the defensive personality changes resulting from them, etc. All these facts are taken for granted here although they are, of course, considered subject to further scientific observation. The observation of these facts, however, and the theory of transference, resistance, and repression implies and has led to many concepts of what Freud calls "metapsychological" nature.

Freud and the first psychoanalysts were faced with the task of conceptualizing a field which had almost no tradition. They were erudite men who had at their disposal modes of thought from a variety of the scientific and extrascientific fields which in the past had monopolized man's conduct, such as theology, philosophy, and art. In the psychoanalytic system not only the superficial evidence

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entity from the way a given complex of ideas is represented on the dynamic scale of a culture's collective consciousness: in one variation as historical memory and in another as mythological history; in one disguise re-enacted in heavy rituals, in another in light games; in a third entirely represented by avoidance. The complex may be recognizable in culture pattern dreams or in individual dreams; in humorous or in hateful projections on the neighbor, on the prehuman race, or on the animal world; it may be represented in deviating behavior designating either the select or the damned or both.

[3]A future psychoanalysis of play will be based on material allowing the weighing of an individual's play against that of his age and culture group.

of an occasional term such as *Oedipus Complex* points into the past, but, more important, such sweeping conceptual configurations as the free floating in the body of a *libido* with its *cathexis* and *catharsis;* in the mind, the struggle of an ego between an *id* and a *superego;* and in the world at large, a gigantic melting of life and death instincts.

The libido concept, for example, might be suspected of having fallen heir to the Greek interpretation of hysteria; there the *uterus* wandered about in the body, selecting its organ for interference. In Freud's system it is not the uterus but the *libidinal cathexis of the psychic representation of the genitals* which is displaced to the representation of other parts of the body which then show conversion symptoms. The same libido, if cathexing the therapist's representation in the patient's mind (and reinforced by the transference of the cathexis of the father image to that of the therapist's) creates the favorable condition for the influence of the therapist on the patient, as the *animal spirits* of the last century did while still actually crossing the space between patient and therapist.

In spite of his antiphilosophic sentiments, Freud on occasion referred, not without sovereign pleasure, to such similarities between his concepts and those of prepsychological thinkers, the last example being the identity of the *life and death instincts* with Empedocles' *philia* and *veikos* (7). His *"id"* he early recognized as a kin of *Schopenhauer's will. Both id and will, several steps further back* in the history of conceptual configurations, take on personal shape, appear as the *devil.*

Freud has traced these and many other ancient images from their projection onto the periphery of man's world back to where they originated, in *man's mind,* where observed with dynamic tools they become a subject of psychology. He draws these images closer to the scientific thinking of his day (and nearer to observation and, ultimately, experiment) by making them *quantitative* and *genetic.* Thus, the libido theory on the one hand becomes something like a theory of *preservation of psychic energy;* on the other hand, the theory of the fate of the libido directly contacts the *theory of evolution.*

Freud's historical habit of weighting a particular observation with whatever standard of conceptualization seemed adequate to further its clarification, has led to the use in psychoanalytic literature of

a disturbing variety of, as it were, terminological currencies which alternately represent human data in terms of the mythology of milleniums, the philosophy of centuries, and the scientific methods of decades. Freud implies that in time all these currencies will be exchanged, at their face value, into one based on the clinical and experimental standard of the day.

The real danger, however, of the pre-scientific ancestry of revolutionary thought in psychology has proved to be and will, at least for a while, be a group-psychological one. A certain idea, by fitting into an ancient, possibly long-suppressed mode of thought, to some appears immediately convincing and pertaining to the nature of the experience: "this I have always known." The same mode of thought being alien (perhaps repressed) to others, may deter them from consideration of the same idea even if it is already well on its way to substantiation: "this I have always avoided." In such development observation is often little consulted; group identification replaces scientific method; and a regression takes place to conflicts in ancestral thinking and to spritual and philosophic leftovers and leftouts.

This third influence in the formation of a system, namely, the group psychological meaning derived from the organization of its adherents, has been especially powerful in the history of psychoanalysis for another reason intrinsic in its nature.

When Freud, in the good faith of scientific ethos, first revealed the hitherto undescribed manifestation on which he focused his attention, and the unheard of selections and associations of his mind which made him focus on them, he was met with an overwhelmingly ugly response from the scientists of his day. Partially understandable as a Victorian reaction against a bold mind and his sovereign habits of deduction, this response nevertheless had certain qualities in common with the behavior and the argumentation of a cornered patient: it forced Freud to realize that his era was going to resist as one patient the Freudian kind of enlightenment. He proceeded, however, to recognize and to conceptualize this *"resistance" as an attribute of living psychological matter.* Freud's observations had struck at the specific illusion which had reached its climax in his era, namely, that there was no psychological limit to the subordination of sex and aggression to will, belief, and reason. Resistance, in the larger sense, is human inability to accept any theory which makes the current conception of "free will" relative.

The ever-renewed detection and therapeutic utilization of the selective, repressive, projective mechanisms in the human mind are the tools which Freud gave to psychotherapy and psychology; they point beyond systems and schools for they insist on pursuing resistance wherever it chooses to hide in the evolution of human consciousness, and no school can avoid for long becoming a hiding place for collective regressions—not even the psychoanalytic one from which groups of adherents necessarily aim to derive a secondary gain by ascribing to themselves more than a relative freedom from resistance and privileges such as methodological isolation.

But there is no reason to doubt that all these phenomena will gradually and permanently become subject to the developing psychoanalytic method itself. Always proceeding along the line of most resistance, it will stimulate clinical observation and its application, and will make it possible to understand conceptual and group psychological processes such as marked the beginning of its own history.

4.

Freud has not analyzed children himself. He based the reconstruction of psychosexual development in childhood on the systematic analysis of the verbalizations of adult neurotics and on a wealth of corroboratory, although unsystematic, observations of childhood. When it became apparent that clinical contact with small children was possible, Freud left this field to others (and expressly to his women pupils). The few references to direct child observation to be found in his work (8) make apparent the loss which this Victorian fact implies for child psychology.

Anna Freud's cautious and clear *"Introduction to the Technique of Child Analysis"* (5) still seems to be the only safe technical statement in regard to the application of psychoanalysis to clinical work with children. However, detailed discussions of her Vienna seminar, which represented the most significant expansion of her basic technical ideas, have not been published. The field has thus been left to clinical abstracts and to one most ambitious systematic attempt, namely, Melanie Klein's *"The Psychoanalysis of Children"* (11).

Mrs. Klein has enriched our thinking by concentrating on some neglected features of infantile, and especially female, fantasy life,

such as the preoccupation with the body interior. Her book, however, abounds in methodologically irresponsible statements referring to what its author is supposed to have "shown" in regard to the psychology of normal childhood. From these "demonstrations" she and her followers derive the license not only to reconstruct earliest psychic development where it is least approachable, but also to convey such reconstructions to child patients. Their interpretations, fairy tales stripped of all artistry, seem to fascinate children and are said to cure them. The author of this paper cannot, at the present time, overcome a suspicion as to the final adaptation of the child cured by this method to any environment, except that which cultivates a special type of psychoanalytic outlook.[4]

In some of the contributions to the child analysis number of the *Psychoanalytic Quarterly* (1), a new living relationship between disturbed child and understanding adult (a kind of doctor-aunt who helps the child to find words for unspeakable experiences) is lucidly described.[5] As far as smaller children are concerned, such descriptions seem most convincing where the historical tool of psychoanalysis, namely, "making conscious," is not assumed a priori to have been applied. While the concepts of resistance and transference when applied to smaller children lose little of their value as tools of investigation, repression, because of the lack of dependable verbal contact between therapist and child, becomes a somewhat meaningless concept; by inferring it, one often misses the opportunity to observe stages in which what is later to be called repression is just about to happen, and by treatment seems prevented rather than made retroactive. It is exactly this prevention of a disastrous gap between verbal and subverbal experiences in childhood which promises to become the most useful contribution of psychoanalysis to a future era (and promises to have been the most poignant criticism of the passing one).

However, we have not always been conscious enough of the fact that in the humanities premature reconstruction has to resort to medieval images. In some of our writings Freud's tentative abstractions of a topology, a genetics, and a mechanics of psychic life

[4] For the most comprehensive criticism of the "English School of Child Analysis" see Robert Waelder (16).

[5] The author wishes to recommend especially the papers by Bertha Bornstein and Steff Bornstein (1).

are inadvertently colored by visions and clothed in moods. What the child's ego is said to experience and to do often goes even beyond the concept of a persona in a person; it implies an organism with a sensory and motor system of its own within the organism—indeed, a human-like being between a devil- and a god-like one. Like *diaboli* of old, these parts of the psyche reflect and act, avoid effort and gain satisfaction with sly and dialectic skill. Similarly, in the conceptualization of inaccessible parts of childhood there occur *homunculi* of synthetic babies who are complete miniature editions of adult cannibals or psychotics; or reconstructed newborns laden with *primordial images* of sin and guilt. Thus, residues of the intellectual past and by-products of extra-scientific ideologies of today are used to draw prematurely into a developmental synthesis of "the child," striking observations as well as moods, beliefs, and divinations from many planes.

Any description of a prolonged period of child psychoanalytic treatment seems to find a powerful obstacle in the fact that the child, relatively more than the adult, is contantly changing under the influence of extratherapeutic factors. Therapeutic influences act at best as accelerators and inhibitors on a continuum of maturational processes which, *in their normal or, let us say, extra-clinical manifestations, for the most part have never been properly studied and described.* The intimate changes observed during a child's treatment therefore are too easily explained as a function of the treatment; while the danger implied in attempts to influence by means derived from clinical work the as yet unknown factors in the maturation of the child must be obvious. Thus the early possibility of basing a reconstruction of the child's normal inner development on present clinical data and applying such premature syntheses to the philosophy and practice of education, seems doubtful. But it will be as rewarding as it is time-consuming to apply child-psychopathological knowledge to research in "normal" childhood, i.e., the development and inner life of children whom neurosis has not isolated from the supporting field of group values.

II. THE INITIAL SITUATION AND ITS ALTERNATIVES

1.

Every psychotherapist has certain vague expectations in regard
his room for the first time may
Against this generalized picture
out in its dramatic individuality.
hand in hand with his mother.
mental note of the fact that our
tion. On entering the waiting
nd is then invited into an inner
by "adult furniture") is set aside
al business, the other half (sig-
of ordinary toys) for a child's
that he is expected to let his
om and to allow the connecting
l the toys are then to be at his

ng patient with a maze of con-
like to describe it as consisting
biguity which are created by the
t, toys, and inner conflict.

He may hold on to her hand
r in the waiting room, demand
rnly remain near the door which
If he does this, the situation is
: goal, his mother, and through
danger. This idea, however, is
small patient usually has reached
cannot understand why he does
while the home atmosphere, in
subjected to varying educational
/ith unsolved conflicts. Thus,
tracted by the *doctor possibilities,*
offers possible escape from the unbearable pressure of the domestic situation. Something which the mother or somebody else has said usually has created a slight hope in the child that the therapist may be a person who understands the conditions and the tempo in which a symptom of fear can be

gradually abandoned without giving place to chaos within or more trouble without. Many a child has learned also to expect that he will be able to play for time by repeating to this new therapist what has satisfied the old ones. On the other hand the therapist has been called a "doctor" and the medical implications of the surroundings add to the mere strangeness of the situation and create the expectation in the child that some kind of surprise attack is to be made on his physical or moral inviolacy. The mother, with the best intentions, often transfers the negative aspects of the "mother field" into the field of doctor possibilities; she insists, for example, on reporting in the child's presence latest developments, on admonishing, or even threatening him, or on trying to secure the therapist's promise of diagnosis and advice. Literally and psychologically, therefore, the mother has to be referred to the waiting room; the child must feel that time has another quality in the doctor sphere, in which, paradoxically, there is no hurry about getting well.

In the meantime, a third ambiguous field[6] has competed with mother and therapist in dominating the child's expectancies, namely the *toys*.[7] For the child they open another haven, in which space too has another quality, and the therapist usually is quite glad to resign for a while in favor of this quasi-free sphere. Indeed, *"what would we do without toys,"* has become a common exclamation now that we have relaxed our efforts to ignore this most natural tool. The toys evoke in the child that remainder of playful explorativeness which his neurosis and the present doctor situation has not been able to submerge; and once he has started to select and manipulate, we can be sure that the temptation to play and to be the unquestioned and inviolable master in a microcosmic sphere will be great. However, we again see the child manifest hesitation. He has experienced too often the fact that the imagined omnipotence in the toy world only makes him feel his impotence the more keenly when he is suddenly interrupted. Playfulness does not rule until

[6] I must acknowledge here the influence of Kurt Lewin's terminology, although my grasp of it does not seem to go beyond the recognition of a most valuable reformulation which gives certain modern modes of thinking terminological recognition.

[7] In regard to the influence of the presence of these toys on the total situation, an animal psychologist's remark comes to my mind: "Whenever a rat is placed within sight or smell of food, it appears quite obvious and therefore it tends to remain unremarked that his selectiveness as to the surrounding means-objects are thereby affected" (15).

(and then only as long as) pressing purposes and fears have lost their compelling power. Thus the child often begins to play with hesitation, with selection, with one eye on the therapist or the door—but he begins to play.

Peace seems to reign. The mother is comfortably seated in the waiting room and has promised "not to go away"; the doctor has been diagnosed as a person who will not make surprise attacks on one's bodily or moral reserve; the toys, sure not to question or to admonish, promise a time of "unpurposeful" play.

However, it is at this point that the most dangerous field of ambiguity; namely, the child's reluctance to confess and his need to communicate his *conflict,* takes possession of the peaceful situation. Whatever it is that drives the child—an urge to get rid of some past or to prepare himself for some future, or both—the ever-present gestalt of the life task which has proved too much for him appears in the metaphoric representation of the microsphere. It is here that our "sign-reading" sets in, and that the tools which Freud gave us become indispensable; for they make us realize that in the playful arrangement which the child is driven to superimpose on the inventory of toys we offer him, he offers us an outline of the "inner maze" in which he is caught. Our small patients either show an anxious care in excluding this or that toy from their play or they work themselves toward a borderline where they themselves suddenly find their own doings unsafe, not permissible, unworkable, or unsatisfactory to the point of extreme discomfort. They cannot go on playing in peace—a phenomenon which we shall call play disruption.

I shall give a brief example of the place of such a play disruption in the four fields of ambiguity, governed as they are by the changing valences of the parent who is present, the therapist, the toys, and the shadow of inner conflict.

A girl of four still withstands toilet training. When put on the toilet, she seems unable to "let go"; later she soils her bed. Recently she was knocked down by an automobile; this has increased her inaccessibility and her pale stubbornness. [As is obvious from her utterances at home, a small neighborhood dog is, at the moment, important in her fantasy life. It is female like herself, and not housebroken, and recently was knocked down by an automobile too; but unlike herself, it is frequently beaten for soiling, was badly hurt in the accident (it lost a leg). This little

dog apparently represents to her all that "is coming to her."]

Very pale, the little girl has finally left her mother in the waiting room. She stands near the door of my room, sucking her finger, neither willing to play nor wanting to go back to her mother. I try to help her by outlining with some blocks a few rooms on the floor (an approach I use only on rare occasions). A little girl lies in a bed, and a woman stands in the middle of the bedroom from which a door leads into a bathroom. There is a garage with a car and a man. After a while the little girl suddenly warms up, approaches with flushed cheeks and kicks the woman doll so that it falls over, closes the bathroom door and goes to the toy shelf to get three shiny red cars for the man in the garage. May we say she expresses a dislike for what must mean to her a mother in front of the little girl's bed and for the demand of the open bathroom door; and that she shows a readiness to give whatever the cars mean to the man (father). At this point, however, she bursts into tears and anxiously asks, *"Where is my mummy?"* In panicky haste she takes three red pencils from my desk and runs out of the room to present them to her mother. Then she sits down beside her, pale and rigid, determined not to return to me. (The mother wants to give back the pencils, but she is told that the child is free to return them another time.)

The patient has scarcely reached home when she seems to feel guilty about having taken my pencils and shows signs of despair at not being able to bring them back until the next day. However, when the time for her next hour has arrived, she sits in the waiting room clutching the pencils in one hand, some unknown object in the other. She refuses to come with me. After a while it becomes noticeable that she has soiled herself. When she is picked up to be led to the bathroom, the pencils fall to the floor and with them a little toy dog, one of whose legs has been broken off.

If we undertake to interpret this example properly, we would be led to consider in detail the patterns of guilt-feeling in this child: Having manifested aggression toward the woman in the play setup, she experienced the fear of the possible loss of her mother's love; in hurrying to bring her an equivalent of what she had given to the man in the play, she happened to snatch objects which belonged to me, thus provoking a situation which would again ask for acts of rectification and which would imply an element of desire for

punishment. (As if under compulsion to do or to allude to that which brings punishment, she held on to my property, brought the toy dog with a damage identical with her dog friend's injury, and soiled in my room—transferring a "symptom" for which she had never been punished in a way either quantitatively or qualitatively equal to the hostility it expressed, as subsequently became apparent.)

What interests us here first of all is the traffic between the fields outlined above and the play disruption's place in them. The little girl moderately sure that her mother would not leave and somewhat loosened by the playful way in which the therapist approached her problem got as far as to say in the language of play signs that she did not like the idea of the lady standing there near the open bathroom door but was willing to give the reddest cars to the man, when she must have experienced what Adam did when he heard God's voice: *"Adam, where art thou?"* Her play suddenly seemed all-visible in the mother-field and she went to atone for her deed not, however, without stealing my pencils and thus innocently establishing a new goal in the doctor sphere. The trip home again increased the stubbornness against mother and bathroom demands and, consequently, the importance of the goal she had established in my sphere. The next day, back in my office and faced with the necessity and possibility of making everything come out even, she is caught by emotional paralysis and her symptom expresses for her what she did not dare to express in her play; namely, the inability "to give" to an ambivalently loved person.

It is this very inability which in this case called for analysis and re-education. However, we shall have to resist the temptation to describe the little girl's treatment at this point. Instead we concentrate on some further aspects of the described play situation.

2.

We may call the toy scene on the floor *microcosmic,* i.e., *an arrangement of small objects in such a way that their configuration signifies a configuration of conflicting forces in the child's life,* in this case the child's retentive attitude toward her mother and her generous attitude toward the father. That the woman in the play really signified her mother (and that the man, perhaps, already indicated a father transference on the therapist) became plain when the microcosmic play was disrupted and she tried to rearrange

another sphere in such a way that it represented a reversal of the "guilty" microcosmic configuration: she gave to her mother—and robbed me. Such *rearrangements of the child's relationship to the real persons or the life-sized objects present in the therapeutic situation* we shall designate as *macrocosmic*. In this case the traffic from what we shall call, for short, the *microsphere* to the *macrosphere* implied a play disruption which, of course, is not always *necessarily the case*. Such a shift can take place as a playful expansion, perhaps with a transition from solitary play to a game, especially if another person is induced to play a rôle in the desired macrocosmic arrangement. (Using, for example, with an omnipotent gesture, a chair for a horse to ride on and to order about, would be the macrocosmic play equivalent to the microcosmic form of making a toy rider hop along the floor.)

Beside the microcosmic and macrocosmic "spheres" of representation we can discern an autocosmic one: *the sphere of dramatization by means of an interplay of body parts and organ systems*. The little girl's soiling belongs here: it was a *symptom in the autosphere*. There is also *autocosmic play*, i.e., the original play in the growing world of the child's expanding body consciousness and the mutual enchantment of its parts.

3.

The antithesis of play disruption is a phenomenon which we shall call "play satiation." If play "succeeds," i.e., if it is not disrupted from within or interrupted from without, it has an effect on the child comparable to a few hours of good, long-needed sleep—everything "looks different." I do not doubt that it is this autotherapeutic function of play which we are restoring in many cases by creating for a child regular and undisturbed periods of play, no matter how we rationalize what is happening during such a "cure." In contrast to the little girl's macrocosmic outbreak after the microcosmic disruption we sometimes see microcosmic play satiation lead directly into a macrocosmic play or game in which the rearrangement achieved in small dimensions is tried out (and this often too courageously for the child's own anxiety) on big objects and people. I shall give here a non-psychiatric example of this normal phenomenon.

I once visited a boy of four a few hours after he had undergone an ear operation. He was, of course, most uncomfortable, insisted

that many parts of his body hurt and that he wanted to urinate and defecate but was unable to do so. Three questions were most apparent in his complaints: first, whether or not the doctors were going to stick more instruments into him; second, why it was that only the doctor could remove the bandage around his head; third, whether his ear was still under the bandage.[8]

An understanding doctor had given him a roll of adhesive tape shortly before and he had held it, clutched in his hand, ever since. The tape was wound on a tin spool which fitted into a tin cylinder. Only one end of the spool could be inserted into the cylinder because the rim on the other end extended beyond the cylinder and served to fasten the two pieces together. The boy removed the spool from its container and suggested the following play: "You try to put this (*A*) into that (*B*)" (Figure 1). Accidentally I tried it the wrong way,[9] whereupon he said with startling emphasis,

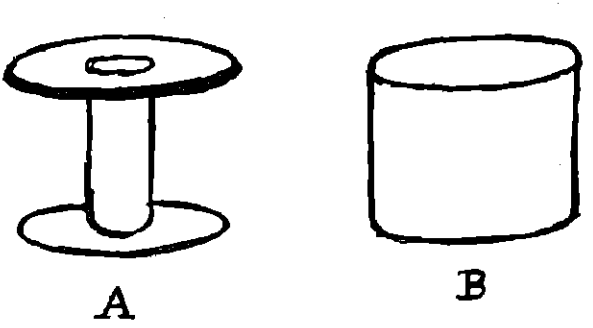


FIGURE 1

[8]Worries of this type are, of course, common among hospitalized children. The increased specialization which makes it necessary that before and after an operation the child is contacted by a great number of experts, each of whom has his own little method of "talking the child's language," brings with it a disturbing variety of assurances, reassurances, promises, back-slaps, playful threats, etc., which may often make the psychological safety a reverse function of the physiological one said to be achieved by the specialistic perfection. As our patient was being prepared for his operation one attending individual had referred to his "beautiful eyelashes" and jokingly threatened that upon waking up he would find them removed from his eyes and attached to hers.

[9]That he had the spool and that I made a mistake have to be considered as (regularly present) *supporting factors* in the particular development of what, in view of its coherent manifestation, must be considered the "contemplated" play configuration.

"It's much too big!" Since he kept repeating these words with a vague expression of pleasure, I coöperated by not accomplishing the deed, and by repeating my mistake over and over again, giving him the repeated opportunity to pronounce the magic phrase, *"It's much too big."* Each time I had failed to fit the spool and cylinder into one another, he took the two objects and, fitting them correctly said with much emphasis, *"Now it's closed."* The repetition of this ritual of pretending that *only he could stick A into B* already seemed to influence his general condition considerably.

Suddenly he said, *"Let's pretend this is a leg and it's sore."* He attempted to unwind the roll of adhesive tape, but found he could not separate the layers. Disappointed, he asked me to unwind it. I played that it was very difficult to unwind, whereupon he said with glee, *"We need a giant for that."* I pretended to phone the nurse to send up a giant, then left the room and reappeared as the giant. However, I had a white coat on which made the play situation resemble too much the actuality (he was a patient expecting a doctor). He asked anxiously why the giant had an apron on. He quickly recovered, however, and after the giant's initial help, began to remove the tape from the spool (to which task, as had now been proved, only a giant's strength was equal). Pieces of it were placed around the cylinder, which was now serving as the "leg."

There was much joyful concentration on the completion of the "bandage." But a few tiny spots of red inscription were not covered by the tape and he now concentrated on them. *"Look! There's a toe sticking out. And here is another toe, and another toe."* I asked, *"Shall we put the bandages around the toes, too?"* He replied enthusiastically, *"Yes,"* and put the tiny bandages over the toes. While doing so he began to sing and already felt quite cool. It was evident that he felt no pain.

When the entire surface of the cylinder was fully bandaged, the patient inserted the spool into it and taped over the whole configuration. *"Nobody can take this off."* He asked his mother and me to remove the bandage, but, of course, "we couldn't." Whereupon he proudly repeated that, first, *nobody but he could remove the bandage or the spool;* that, second, *he was not going to do it.* Our "requests" were of no avail.

It will already have become evident to the reader that the patient arranged the play objects in such a way that they expressed in sign

magic his active mastery over the situation victimizing him at the time. That only he could stick Object *A* into Object *B*, a pleasure provided by the nature of the toy (which, as we shall see, was subsequently bandaged), may have had a quite general meaning of mastery, although it may have already implied the more specifically satisfying idea that nobody (i.e., the physicians) could stick more objects into his head. The fact that he was obliged to wait until the physician was willing to remove his bandage was reversed by the game wherein only a giant could remove the adhesive tape from the spool and only the child could remove the bandage from the cylinder (but would not do it). Finally, since he himself had covered the "toes" so carefully, he knew that these "extremities" were there and that he himself had covered them—an arrangement which might have been reversing the actual situation wherein the physician had covered his ears and would not allow him to see whether or not they were still there.

After approximately half an hour of such play the patient was smiling and singing. He fell asleep after I left. When he woke up again he smiled mischievously and said to his mother, who was sitting beside his bed, *"Let's put some bandage over the doctor's eyes when he comes in; let's put it all over him. The big bad wolf —only then we wouldn't have enough bandage left if Charlie*[10] *hurts his leg."*

Leaving aside the last "altruistic" remark in which the patient already visualized a time when he might be providing bandages for his brother (who had by then become the medical victim), we see in the remark about the doctor being covered all over by the bandage a *typical omnipotent rearrangement in phantasy of the macrosphere in accordance with a previous microcosmic rearrangement.* First, only the patient could make and remove bandages, and now the doctor himself becomes the victim of bandaging to a degree ("all over him") surpassing the discomfort he had created for the child.

This wishful and wilful restructuralization in play of the child's most immediate sphere of discomfort uses, of course, all the mechanisms which Freud showed were governing factors in play, in his classical example of a boy who had to adapt to his mother's absence:[11] the working over of an experience in which one had been a *passive*

[10]The patient's brother.

[11]The reader is urged to read this description and its discussion (8).

victim by its representation in such a way that one becomes the active aggressor against a toy or a partner. As for microcosmic play, the traumatic experience is caught in a *small* and *simple* configurational frame (an accessible *"Beutefeld"*), and is to be reprojected in its all-too-simple formulation into the bigger world, which consequently becomes a macrocosmic play-and-error field for microcosmic theories.

In the little girl's case the microsphere represented "a family"; in the case of the hospital patient, endangered parts of the body, ear, head, etc. Thus a variety of segments of the pressingly immediate life situation may be projected into this least refractory of all spheres of representation. A child concerned about "the body as a whole" or even about "life as a whole," may build corresponding configurations both as wishful arrangements and as traumatic repetitions. Illustrations of this will follow.

4.

Of special interest is one of the intermediate steps between the spheres of representation, namely, behavior with *extensions of the autosphere.* Play belongs in this category wherever it is clear that an isolated object is used as a means to extend or intensify the mode of expression of an organ or an organ-system and does not become a part of an extrabodily microcosmic arrangement. Let us say a block, if replacing the finger as an object of licking, is a part of an autocosmic extension; it would still be one if rhythmically banged against another block, while it would become a part of a microcosmic arrangement when, with consideration for its physical laws and its usual connotation, it is placed on another block so that together they may form a building.[12]

[12]A schizophrenic patient at the Worcester State Hospital was asked to build a house. He looked into space, grasped one block firmly and "tasted it" with his fingers; then he took a block in the other hand and did the same thing. With an expression of recognition, he bent his head forward, then brought first one then the other block to his mouth, snapping at them, making sounds of "tasting" and exclaiming "Good!", "Good!" He did not touch them with his lips; nor was he able to put more blocks on top of one another than the two which he could hold in his two hands. Similarly, when given toy cars, he could (with much delight) push them so that they flew over the edge of the table, but he could or would not "direct" them in any way. He manifested a stage of play organization between the autocosmic extension use of toys and their use in the microsphere.

These spheres of representation and dramatization can help us where it is advisable to neglect social connotations, such as what is considered to be a play act, a serious deed, a habit, a symptom, etc., and to find instead in corresponding configurational properties the common denominator for the various parts within the complicated unit of a clinical contact. Our girl patient, for example, manifested the quandary of coöperative retention and elimination on the one side and hateful retention and ejection on the other (plus their relationship to mother and father) in all the three spheres mentioned.

As for the traffic between these spheres of representation we observe that just as an organ, the whole body, a family constellation, or a conception of life as a whole can be represented by a microcosm, so sucking, banging, defecating, etc., when they are prolonged habits, can often be understood as dramatizing social situations and attitudes.

We will readily see that especially for the disturbed child from three to six years old (the age range in our study) autocosmic manifestation leads back easily into the sphere of regressive habits, while macrocosmic expansions make the child try out the environment in a manner both surprising and displeasing to attending adults. There remains then, by force of age preference and expediency, the microsphere as a haven for overhauling the boats before taking further trips into the unknown. Our disturbed children approach this sphere, break down or hesitate before they reach it, experience a disruption in it, or suffer a belated disruption after having over-estimated the omnipotence provided by it. The "sign-magic" used during such behavior seems to us to outline where in the child's life the sphere of relative tolerance borders on the danger sphere of unbearable pressures.

Among such manifestations, that of extrabodily representation of organ-modes, which is the subject of early and special environmental interference, is of outstanding importance for the understanding of preschool play and also for that of all emotionally disturbed older children.

As diagrammatically developed in a previous article (2), the orificial organ-modes incorporation, elimination, retention, and intrusion and the body apertures which are their "models" par excellence, namely mouth, sphincters, and genitals are combined to normal mutual emphasis in successive stages, namely, the stages described by Freud as pre-genital. In each of these stages there is an interrelation be-

tween the sensitization and training of a *vital orifice* and the growing *periphery of mastery* (*a*) oral-(respiratory)-sensory-tactual, (*b*) anal-(urethral)-muscular, (*c*) genital-(urethral)-motor. This interrelation can express itself in mode-behavior both *centrifugally as generalization* of the mode, i.e., the mode of the dominant zone becomes the dominant mode of behavior in general, or *centripetally* as a *specialization* of the zone (i.e., a general tendency can express itself in the habits of one zone). For example, the retentive mode may first find emphasis in sphincter-habits and then appear as a general retentive tendency in many aspects of behavior; or it may become noticeable in other habits (such as keeping food in the mouth and neither swallowing nor returning it) and then find its most intensive expression in sphincter-habits. We thus can speak of *mode-fixations* and of *zone-fixations,* the first being a carrying over of one mode from its model-zone to other zones where it is as it were a gesture without functional logic or in the use of one zone for several untimely and displaced modes. Some of these generalizations and specializations are only observable in a limited number of temporarily or permanently fixated children.

"Surveying the field of zone experience and mode manifestation, one finds that what Freud has described as pre-genitality is the development through a succession of narcissistic organ cathexes of impulses and modes of behavior the final integration of which implies all the possible relationships of a body and an object and thus the basic spatial modalities of experience. Led (or confused) by zone experience as well as growing capacity children experiment more or less playfully in space with all the possible relationships of one object to another one and of the body as a whole to space." To modes which in their bodily, spatial, or social expression are curtailed by inhibiting experiences "the organism offers a limited range of safe displacements in habits and minor symptoms. Reality allows for certain systems of subjectified perception; society permits a number of odd social habits and, more or less queer traits. To the child especially the world of play affords opportunity to experiment with organ-modes in extrabodily arrangements which are physiologically safe, socially permissable, physically workable and psychologically satisfying."

Between displacements within the body (habits, symptoms) and the free external displacement in play, we find various arresting

combinations. The following example, a previously published (2) non-psychiatric observation, illustrates the way in which the dominance of simple organ-modes during training may for a while govern a child's spheres of behavior. A little boy, *H*, two and one-half years of age, who struggled rather belatedly against enuresis, began to take to bed with him little boxes, which he held closed with both hands. When a box opened during the night, sometimes apparently with his unconscious help, he would cry out in his sleep or awaken and call for someone to help him close it. He would then sleep peacefully, even though not necessarily dry. But he continued to experiment.

During the day he looked around for suitable boxes—obviously driven by an urge to materialize an image of "closedness." Finally he found what seemed to fit the image, a cardboard cylinder which had been the center of a roll of toilet paper. He put two cardboard caps from milk bottles over the openings of the roll. All through the night he would try to hold this arrangement firmly together with both hands—as an animistic guardian of the retentive mode. But no sooner had his training achieved a relative success in closing his body during sleep than he began, *before* going to sleep, to throw all available objects out of the window. When this was made impossible, he stole into other rooms and spilled the contents of boxes and bottles on the floor.

Clearly, the first act, namely holding a closed box as a necessary condition for sleep, resembles a compulsive act originating in the child's fear of failing to retain because of his weakness or because of his wish to expel. Emptying objects, on the other hand, or throwing them out of the window is "delinquent" and the result of the fear of being overpowered by the claims of *society to which he surrenders the zone but not the impulse.* The impulse appears on other levels of representation, where it betrays itself through configurations representing the retentive and eliminative modes.

To prevent the little boy from throwing things out of the window, it was opened from the top. Thereupon he was found riding on it, leaning out into the night. I do not think he would have fallen out; he probably wanted only to show himself "master of openings," as compensation for the surrender of the free use of his excretory openings to society. When, in consequence, his mother kept his window closed until he was asleep, he insisted that the door be left ajar.

Thus not only sections of one's body and toys, but also the body as a whole in its spatial relationship to the whole room or to the whole house, may serve the displaced expression of the impulse in various degrees of compulsive, naughty, or playful acts.

5.

The animal psychologist, having seen rats (whom he had made hungry) learn to run mazes (which he had built) toward food (which he had put there) comes to the conclusion that "the environment takes on for the physiologically aroused organism, by dint of his innate endowment and past experiences, the character of a hierarchy of to-be-sought and to-be-avoided superordinate and subordinate objects" (15).

Essentially, our diagnostic confidence is based on the same expectation, which, however, is derived from the repeated clinical experience that the hierarchy of actually sought-after and avoided toys (offered as stimuli and supports) allow us to draw conclusions in regard to what *has aroused or is arousing the playing organism physiologically and what has happened to it environmentally*. That we cannot consider play an intermission or a vacation from urgent life but rather a continuation of it on a sign level is only our serious adaptation to the serious way in which (given our therapeutic setup) the child behaves with strict selectivity, creates meaningful sign-coherence, and by his emotions betrays a "purpose" where "play" has been suggested.

In describing to the reader, by way of introduction, some of the significant alternatives with which the child is faced on entering the therapeutic situation, and some of the therapist's useful expectancies, we by no means hope to induce him to share what may seem a radical determination. Illustrations can only convince him who already believes that those selected are representative. Therefore I can close this introduction only with the rather inhuman suggestion that a publication like the present one should be read at least twice. Only after the comparison of several cases has made the reader more familiar with the nature of the inventory of possible kinds of behavior from which the individual child makes his choices will he begin to believe that even if presented with different supporting objects the individual child patient could not have produced configurations essentially dissimilar to those which are described in the following pages.

III. STUDIES IN PLAY INTERPRETATION

A. Method of Representation

Our material is divided into *contacts* (visits) which in turn consist of *behavior items*. These items are described and discussed in five categories, *A, B, C, D, E,* which indicate the shifting foci of the analytic attention; their peripheries overlap.

A gives a common-sense description of what happens before the observer's eyes; *B* and *C* demonstrate (in slow motion, as it were) two concurrent tendencies in the observers mental activity: *B* is directed toward a future exact description in areas which can also be explored and measured under other than psychiatric conditions; *C* toward the clinicians age-old right and duty to allow himself to be led by subjective factors. The reader should visualize the relationship of *B* and *C*, and their intervention between *A* and *D* in the following manner (Figure 2).

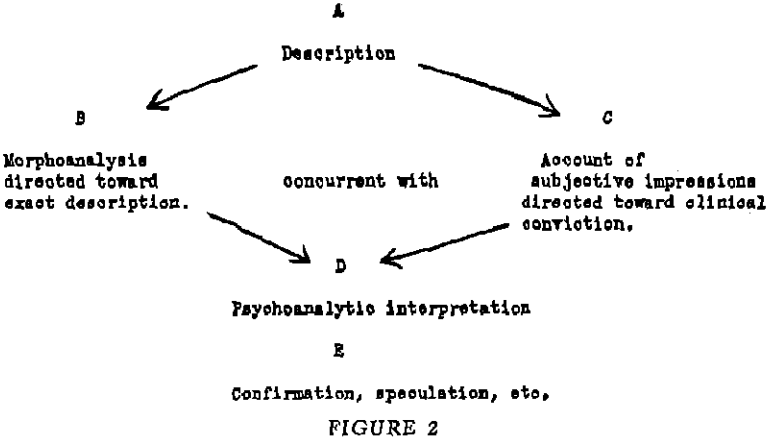


FIGURE 2

"A"

The "behavior item to be analyzed" represents as nearly as possible the span between the moment when we observe that the child has turned his attention to a toy, a person, or a conversational manner, and the moment when we notice that he turns to the next one. This is, of course, a crude concept of an "observational unit"; however, it is the one naturally used in a therapeutic situation in

which the task is to infer from the *selective attractions and aversions created by a standard environment* what the patient's relationship may be to certain classes of ideas and thus to discover the pathogenic associations of his mind—which he may keep hidden, which may be unconscious to him, or whose reference and importance may not be understood by him.

"B"

Morphoanalytic description emphasizing the configurations manifested in four areas of behavior:

1. *Affective:* The patient's manifested emotional *interest in and withdrawal from* the object of the behavior item.
2. *Ideational:* Verbalized *content,* acted out *themes,* etc.
3. *Spatial: Configurations* and *modes* in the three spheres of representation.
4. *Verbal:* Mode of *expression;* speech, voice.

"C"

Observer's Impressions, Associations, and Reflections. While in *B* the therapist attempts an approximation of objective configurational analysis of what he sees and hears in the currently manifest, in C he *gives impressions* ("it was as if . . .") and *associates past impressions:* previous observation on the child in question or on other children, data communicated to him by the parents, etc.; and he *reflects on latent possibilities,* i.e., the possibility that his associations may correspond to a genetic or associative connection in the child's mind between what he is doing under the observer's eyes and what he is said to have done in other situations.

"D"

Psychoanalytic Interpretation.

1. His observational and reflective reactions lead the observer to various *interpretational hints.* A *symbolic equation* or metaphor may make it possible to recognize a play act as alluding to and *standing for an otherwise manifestly avoided* item (person, object, or idea); or a *play arrangement* may prove to represent a specific effort on the part of the child to rearrange "in effigy" his psychological position in an experienced or expected danger situation. Such an arrangement usually corresponds to the child's defense mechanisms (6).

2. If these first hints survive the sifting processes of further observation and investigation, they will sooner or later grow together and create a conviction and an image in the observer's mind in the form of the *reconstruction of a genetic sequence* or of a *dynamic configuration* pertaining to the patient's inner or outer history.

3. The observer may proceed to convey parts of these reconstructions to the child whenever he feels the time has come to do so. This then, is the *therapeutic interpretation.*

"E"

Confirmation of interpretation gained after the contact, and further speculation reaching out beyond the evidence offered by the behavior item.

B. A Six-Year-Old Boy's Secret: John

The observation of the first of our "specimens" led to the discovery of a later verifiable fact, namely, a conscious *secret* kept hidden from the therapist (and his predecessors) by both the child patient and his mother.

John is six years old and a sailor's child. Years of psychiatric investigation have failed to throw light on his impulse to soil himself when overcome by a strange state of rage and sexual excitement. This infantile habit in its importance for the environment has remained the center of a general emotional arrest and of a system of petty delinquency. The mental test shows traces of disintegration and extreme fatigue rather than retardation in his only slightly subnormal intelligence. When he is brought to my attention John is at a hospital where he has undergone (with negative results) an examination of his eliminative organs and an encephalogram; he has also been circumcised. Thus unlike all the other patients to be presented here, John is not brought by his mother. On the contrary (and this is a variation of our model "field situation"), the way back to his mother leads through a successful relationship with me, knowing, as he does, that I will have a word in the final decisions as to his placement, further treatment, etc.

The day before the first regular contact, John had been casually introduced to *Ps*.[13] He had a toy gun in his hand and a dagger at

[13] *Ps* = psychoanalyst or psychiatrist, *Pt* = patient.

his side and had exclaimed, *"I am a cop."* When asked, *"Who are you going to shoot?"* he had replied, *"The bad guy." "Who is the bad guy?" "Me."*

Today *Ps* brings him some plasticine because he was told that John had been sad about the fact that none of the hospital toys were "his own." *Ps* therefore expected John to spend valuable time on the question of which of *Ps*'s toys he would be allowed to take to his room, a common technical problem which can be solved only from case to case and often is of diagnostic value in itself. However, *Ps* did not want to lose any time in this instance and assumed that once the ownership of the play medium was settled *Pt* would concentrate more quickly on whatever he needed to express. *Ps* also considered plasticine to be a fitting "support" for the phantasies of a child who soiled and played with faeces.

1. *First Contact*

John appears, armed again and looking pale, forlorn, and somewhat scared; he accepts the plasticine with surprised eagerness but without thanks, and immediately concentrates on making an "aeroplane," which, as he says with a shy smile, "brings people from across the ocean." This smile quickly gives way to serious concentration, during which he ignores *Ps* for a while.

"A"

BEHAVIOR ITEM TO BE ANALYZED

Plasticine: Balls

John makes small *balls of plasticine.*
With three blocks he builds *a grocery store.*

"You are the grocery man; I am a truck driver." John fills the truck with the balls and then, elaborately and with a "motor noise" approaches the store, finally dumping the truck's contents into a corner. When asked, "How much does the grocery man owe you," John refuses payment (as if the delivery represented a present to the grocery man). This is repeated.

Suddenly he calls one plasticine ball *mother nut.* Then he takes a smaller ball of the same color and calls it *baby nut.* He then makes of another color plasticine a long row of balls equal in size to the first one and calls them *brother nuts.* "Whose brothers are they?" *"My mother's brothers."* You

mean uncles?" John becomes very pale, sways as if he were going to faint, and leaves the room hurriedly.

After a while he comes back, obviously from the toilet for he refers to his general state with the words, "*This is the way I feel when I soil.*" *Ps* asks once more, "Now tell me, who are your mother's brothers?" John, with a desperate look, "Me."

"B"

MORPHOANALYSIS OF MANIFESTED CONFIGURATIONS

1. *Affect as manifested in interest and withdrawal*: The interest in the plasticine is first one of hungry *taking* into *possession*. Then follows a short period of quiet *play concentration* out of which suddenly emerges the idea for a *game*. The expression increasingly becomes one of eagerness to play in *coöperation with Ps* and to play *at giving him something*. At the height of this contact-seeking the phantasy of the nut family appears. Some implication of this phantasy then brings about a sudden and vehement play disruption: an anxiety attack and the symptom of sudden defecation make an end to play and game. (What is the dangerous implication of the nut family phantasy?)

2. *Ideational content:* (*a*) Balls are being made; (*b*) groceries are delivered without pay; (*c*) a nut family is represented which consists of a mother, a baby, and many "brothers." (What relation is there between balls, delivery, and the members of a family?)

3. *Spatial expression*: After having put aside his weapons and prepared the balls, *Pt* seeks intimate *spatial contact with Ps*, trying to win him for a game in which they concentrate together on the microcosmic elaboration of *Pt*'s phantasies. This game is dominated by the configuration of *delivering and dumping*. After the disruption the autocosmic sphere takes the lead and the patient defecates.

It will be seen that the microcosmic play and the autocosmic symptom have in common the *eliminative mode*, the difference being that the balls are dumped as presents in the context of a general contact seeking, the faeces eliminated in anxiety, followed by a general closing up. (What is to be delivered in friendliness, what retained in anxiety?)

4. *Verbal expression*: (*a*) There is probably more than one meaning in the "nuts" which he delivers, the most obvious

being that the family he has in mind is "nuts"; (*b*) the "me" the day before manifestly expressed the "turning against himself" of the weapons originally intended for "bad guys." Today it turns my questions in regard to the uncles back to him. (Bad uncles in a crazy family? Who are they?)

"C"

Impressions, Associations, Reflections

John, apparently too starved for gifts to smile or express thanks, accepts the plasticine the way a hungry man reaches for food. (This "aeroplane bringing people from across the ocean" could be equally well associated with either John's absent sailor father or *Ps* whose accent indicated he had come from far away. Is this the beginning of a transference, i.e., does this express the need for a father?)

John had been described to *Ps* as a very friendly, accessible, and even voluble boy who craved for a good contact, especially with men. However, at a certain point he would always close up without any real understanding having been reached. When would he close up in the game with the balls which seemed to mean more and more to him as he proceeded?

He made balls, then seemed very eager to play in coöperation with *Ps* and to deliver something to him, a mode underscored by the refusal of payment which would naturally belong to the commercial play content. This "delinquent" boy who steals and hides what belongs to others and does not even give his faeces at the requested time wants to deliver something to *Ps* (a father substitute?).

The nuts turn into a family, a mother, and a baby. Is he homesick? One automatically expects next a father and a brother (to complete approximately the actual family constellation), but John lets about fifteen "brothers" follow who are different in color. The number makes *Ps* suspicious and he asks who they are. The answer, "mother's brothers" could still mean, for example, the many brothers which he expects his mother to produce now that she has started on that line. To make sure which kind of brothers he means, *Ps* gives him the term for a mother's real brothers.

The word "uncle" seems to hit him like a blow, causes panic with organic symptoms, including the urge to defecate, and ends the game. "Uncles," of course, is not always a correctly used

term, and the "different color" suggests that these uncles may not be real relatives, may be outsiders, strangers—John's father is a sailor and the mother has many nights without a husband.

After the disruption and John's return from the toilet, he had answered *Ps*'s last question with "me"—just as he had done that day before when asked, "Who are you going to shoot?" In other words, when asked about the subject of admitted aggressive tendencies, *Pt* had evaded the issue by putting himself jokingly into the rôle of the "guy" whom he wanted to harm. Today, in a much more serious way, he acts as a victim (internalizes somatically) when asked for the identity of somebody who is characterized as "mother's *many* brothers" who in the play family appear in the *father's place* and cause panic when called "*uncles*." *If our reflections point in the right direction, John has been made the victim (and has gone on making himself a victim) of an unbearable secret which he does not dare convey, namely, his mother's infidelity or maybe prostitution.*

As to our expectation that in John's handling of the clay we would find expressed something of the retentive-eliminative problem which builds the basis of his main symptom, namely his untimely elimination of faeces: We see him all-giving where he plays in delivering the clay balls, apparently unconsciously "giving away" more than he wanted to. Then he tried to close up—and defecates (just as the little girl above had done when deciding to hold on to the pencils). As for the fact that the patient's eliminative system has become the means of expressing ambivalence, constitutional and historical factors will have to be considered. *From the anamnesis one fact suggests itself: John was hard to train and his mother beat him often. When, as we assume, he was a witness to* his mother's infidelity, i.e., saw her do "dirty" secret and sexual things herself, it is conceivable that he was overcome by hate against the deceitful *M* out of love for whom he had fought himself in an effort to become clean, asexual, and truthful. However, more important at this moment than any reconstruction is the recognition of the conscious factors which block the access to the *Pt*'s confidence.

"*D*"

Psychoanalytic Interpretation

1. *Symbols.* (*a*) The *balls* (dumped in playful coöperation) correspond in *consistency* and *mode of use* to *faeces* (which he

ejects in anxiety and anger). (*b*) The *balls* ("mother nut," "baby nut" on the one side, many "brother nuts" on the other) correspond in their most obvious differentiations, *namely color* and *number* to a traumatic family constellation (mother and baby on the one side, many strangers on the other).

2. *Defensive arrangements*: The two sets of symbols correspond to the two main problems (both eliminative-retentive) of the therapeutic situation: (*a*) to the symptom which is to be removed; namely, the untimely elimination of faeces; (*b*) to the first requirement for its removal, namely, the giving away of the mother's secret, which John has succeeded in keeping isolated from all therapeutic confessions made during previous treatment. That *Ps*, instead of asking embarrassing questions, has brought John a present and plays with him, probably increases the (conscious) feeling in John that to be fair with *Ps* he should verbally deliver the secret and thus make the first step toward a new life in which he would learn to retain his faeces. For various reasons, some of which will be made apparent only by further analysis, the patient first resists the overwhelming need to deliver his secret. His defenses are: (*a*) to use the play support offered by *Ps* for the substitution of the delivery of the secret with a delivery in a game. This defense fails when the patient's conversation unconsciously gives away a hint by delivering the strange nut family. (*b*) Noticing this, he uses his second and usual defense; he closes up, as far as the secret behind the hint is concerned, while the eliminative urge expresses itself at its original zone, the eliminative organs. As this happens the conflict between the eliminative and retentive modes and his masochistic tendency to express aroused emotions in a regressive, autocosmic, and punishment-provoking way get the better of him.

3. At the end of this first contact, *Ps* makes only an intentionally vague statement to *Pt*, for which the latter thanks him with a smile. More cannot be done, since it remains necessary to disclose what may be proven to be fact in these "communications," in this case a too delicate investigation with which to burden a child. If the information proves correct, the mother has to be urged to give John permission to talk about *all* his experiences, including those involving her. Only then can we decide how "deep" we have to go to locate the possible damage to John's inner defenses.

"E"

CONFIRMATION AND FURTHER SPECULATION

During P.'s next conversation with the patient's mother, she confessed that there were certain episodes she had urged John not to tell the doctors about, and had added, "Daddy surely would kill me if he heard about it." She asked for psychological help for herself and released John from the promise of secrecy which had blocked previous therapeutic efforts.

The following rudely clinical excerpts from a previous publication (2) may serve to characterize John's further treatment.

"The first barrier which psychoanalysis was forced to attack was the castration fear, which, after the *circumcision, had suppressed his soiling without sublimating the impulse.* Expecting new physical deprivations, the boy would continue to appear equipped with two pairs of eyeglasses on his nose, three knives on a chain hanging out of his trousers and a half dozen pencils sticking out of his vest pocket. Alternately he was a "bad guy" or a cross policeman. He would settle down to quiet play only for a few moments, during which he would choose *little objects* (houses, trees and people) no larger than two or three inches high, and make *covers* for them out of *red plasticine.* But again and again he would become very pale and ask for permission to go to the bathroom.

In describing an automobile accident he had witnessed, in which the chief damage was a *flat tire,* John almost fainted. He felt equally sick when I asked him about certain sleeping arrangements. It appeared that he had seen (in crowded quarters) a man perform intercourse with a woman who sat on him, and he had observed that the man's *penis looked shorter* afterwards. His interpretation of this had been entirely *anal.* Maybe the woman, whose face seemed flushed, had defecated into the man's umbilicus and had done some harm to his genitals. Or the man had, as it were, eliminated a part of his penis into the woman's rectum out of which she later would deliver, i.e., again eliminate, the baby. In addition to the *enlightenment* given that semen and not a part of the penis remained in the woman, the circumcision was talked over and reassurances given for the more important remainder of his genitals.

His first concentrated skilful and sustained play was the following: A caterpillar tractor slowly approached the rear end of a truck, the door of which had been opened. A dog had been placed on the tractor's chain wheels in such a way that he was hurled into the truck at the moment the tractor bumped into it. Obviously he wanted to make sure by *experimenting* with his toys that the pleasant idea of something being thrown into another body without hurting either the giver or the receiver was sensible and workable, although his unresolved anal fixation (no doubt in coöperation with certain common "animalistic" tendencies and observations) did not allow him to conceive of intrusion in any other way than from behind. But it was not as before brown stuff or mud which was thrown, it was *something living* (semen).

Outside the play hours, the eliminative impulse made its reappearance in John's life in macrocosmic fashion. The whole house, the whole body, the whole world was used for the representation of an impulse which did not yet dare to return to its zone of origin. In his sleep, he would start to throw the belongings of other people, and only theirs, out of the window. Then, in the daytime, he threw stones into neighbors' houses and mud against passing cars. Soon he deposited faeces, well wrapped, on the porch of a hated woman neighbor. When these acts were punished, he turned violently against himself. For days he would run away, coming back covered with dirt, oblivious of time and space. He still did not soil, but desperation and the need for elimination became so all powerful that he seemed to *eliminate himself* by wild walks without any goal, coming back so covered with mud that it was clear he must have undressed and rolled in it. Another time he rolled in poison ivy and became covered with the rash.

When he noticed that, by a slowly narrowing network of interpretations, I wanted to put into words those of his impulses which he feared most; namely, elimination and intrusion in their relationship to his mother, he grew pale and resistive. He began a four-day period of faecal *retention*, stopped talking and playing, and stole excessively, hiding the objects. As all patients do, he felt rightly that verbalization means detachment and resignation: He did not dare to do the manifest, but he did not want to give up the latent.

He did not live at home at this time. After many weeks, he received the first letter from his mother. Retiring to his room, he

shrank, as it were, physically and mentally, and soiled himself. For a while he did this regularly whenever his mother communicated with him. It was then possible to interpret to him his ambivalent love for his mother, the problems of his bowel training, and his theories concerning his parents' bodies. It was here also that his first free *flow of memories* and associations appeared, allowing us to verbalize much that had been dangerous only because it had been amorphus.

One day he suddenly expressed the wish to make a poem. If there ever was a child who, in his make-up and behavior, did not lead one to expect an aesthetic impulse, it was John. Nevertheless, in a *flood of words,* he now began to dictate song after song about beautiful things. Then he proposed the idea, which he almost shrieked, of sending these poems to his mother. The act of producing and writing these poems, of putting them into envelopes and into the mailbox, fascinated him for weeks. He *gave something to his mother* and it was *beautiful!* The intense emotional interest in this new medium of expression and the general change in habits accompanying it, indicate that by means of this act of sending something beautiful to his mother the eliminative impulse had found a higher level of expression; the zone submitted to training."

C. A Neurotic Episode in a Girl of Three

The second case should bridge to some extent the short and all too "obvious" first and the longer and very complex third examples. Among the writer's Boston notes, he finds the following encounter with a charming but badly scared little girl who was friendly enough to provide a basis for diagnosis in *two contacts.* We shall call her Mary.

The complaint was that shortly before her third birthday Mary had developed nightmares during which she struck about wildly; at about the same time, after a dozen visits to a play group organized by a group of mothers in a suburb, she had been overcome by violent anxiety attacks with uncontrollable crying. An attempt had been made to let Mary's mother stay in or near the nursery, but this arrangement had helped only temporarily. The routine situations of afternoon rest and going to the toilet seemed provocative factors in the outbreaks of anxiety.

It must be noted however, that Mary had no attacks during her first visits to the play group, although she showed some tenseness

and some rigidity of posture and behavior. When the attacks began, the play group leader as well as the mother felt that something in the nursery must have frightened her. We shall concentrate on the way this complicated something was revealed during the first two contacts with me.

1. *First Contact*

Mary, dark-haired, attractive, is slight but well built. Her walk is somewhat stiff and her handshake rigid, but she seems well coördinated.

"A"

MOTHER

Holds mother's hand as she enters office. When she shakes hands with *Ps*, she gives him a brief smile, then immediately turns her head away and from then on tries not to look at him. *She turns to her mother, puts arms around her, and keeps her* near the open door. While *M* tries to encourage her to look at the toys, she closes her eyes tightly, hides her face in *M*'s skirt, repeats in a babyish voice, "*Mommy, mommy, mommy.*"

"B"

I

1. After a short glance into the room and a very short and slightly coquettish contacting of *Ps* in whom *M* tries to interest her, Mary withdraws to her mother.

2. Spatially keeping near the open door, she clings babyishly to *M*'s body (adherence) as if she wanted to hide in it, and excludes *Ps* to the extent of closing her eyes very tightly so as not to see him (encasement). No selectiveness in regard to the toys is evident.

"C"

I

She first looks at me as if she wanted to see whether or not the new adult is going to understand fun. However, this feeler is quickly withdrawn; her flight to her mother seems somewhat dramatic. I am not sure that she is not hiding a smile. It seems that she did not show any similar reaction to either the secretary or to a lady who spoke to

her in the waiting room; the first impression is that she is conscious of my being a man (doctor) and that there is a coquettish element in her behavior.

"A"

II

MOTHER AND DOLL

Pointing to a (girl) doll, Mary asks *M* several times, "What that, what that?" After *M* has explained that it is a dolly, Mary repeats in a babyish way, *"Dolly, dolly, dolly,"* and suggests in words not understandable to *Ps* that *M* take off the dolly's shoes. *M* tries to induce her to perform this act herself, but Mary simply repeats her demands again and again without listening to *M*.

"B"

II

1. Her interest in the doll is not able to overcome her reluctance to play; she *makes her mother play.*
2. The content: Mother dresses, undresses a *girl* doll's *feet.*
3. Thus Mary draws the doll into the mother adherence.
4. Her speech remains babyish, repetitious.

"A"

III

INTERRUPTION

M begins to feel embarassed since the hour is assuming the character of an observation of her in her play with Mary. She asks, therefore, if it is not time for her to leave the room and to wait outside. *Ps* approves of her decision. Mary does not show any signs of fear when, the adherence to *M* being thus broken up, she suddenly finds herself without anybody to lean on.

"C"

III

Mary showed the same initial lack of anxiety when left by *M* in the nursery school. It seems that either something specific must happen to provoke manifest anxiety or that her anxiety typically remains latent for a while.

"A"

IV

DOLL

M has left the doll in Mary's hand. Mary grasps it firmly around its legs. Suddenly she smiles mischievously, her face flushes, and she begins to touch various things in the room with the doll's head. When a toy falls from the shelf, she laughs and begins to push smaller toys, always with the doll's head, in such a way that they fall too. Her excitement increases, manifested by chuckling and laughter. With special glee she pushes (with the doll's head) a toy train which is on the floor in the middle of the room. As one car overturns, she overturns them all. But then she suddenly stops and becomes very pale.

She leans with her back against the sofa, holds the doll over her genital region and drops it on the floor. She picks it up again, holds it over the same region, and drops it again. While repeating this from ten to fifteen times, she begins first to whine, then to cry, finally to yell, *"Mommy, mommy, mommy."*

(*M*, sure that the game is up, enters room to take Mary home.)

"B"

IV

1. The sudden hilarity and blushing aggressiveness immediately enters into a dramatic curve of quickly increasing excitement. This likewise suddenly reverts to pale inhibition and overt anxiety. Her blind screaming contacts her mother and restores the mother adherence.

2. The discernible content has been: *Pushing and throwing down* of things, not with her hand but with an extension of her hand; the *dropping* from the genital region of a doll (which before, as an extension of the hand, had been, as it were, a pushing tool).

3. *Spatially*, after the physical adherence to *M* is made impossible, the child turns in a diffused way to the room at large and to the small toys in it. Her play is of the *autocosmic extension* type with the doll used as an extension of the pushing hand. Only in pushing the train does she approach a possible *microcosmic theme* (train accident); where-

upon she withdraws to the periphery of the room where she dramatizes the loss from the genital region of the doll which had been an extension of the aggressive hand. Paralyzed by anxiety, she then contacts her mother who leads her out of the conflict situation.

4. Corresponding to this aggressive and regressive behavior, her loud communication changes from coquettish chuckling to excited laughter, to pale silence, to anxious whining, to desperate screaming, "*Mommy, mommy, mommy.*"

"C"

IV

The doll in Mary's hand is used in such a way as to appear that she does not dare touch or push the objects with her bare hand. One is reminded that in the play group her strange way of touching and lifting things ("never with the whole hand") was observed. This and a certain rigidity in the extremities suggest that Mary is (constitutionally or traumatically) disturbed in the manipulative and locomotor sphere.

The way in which she then seems unable to stop her own dramatization of something dropping from the genital region reminds one of the interpretation given to certain hysterical (grand mal) attacks in which the patient is supposed to represent both partners in an imagined scene, namely, the victim and the aggressor in a sexual act. Here it would be the robbed and the robber. Literally, the dropping of a doll from between the legs suggests "birth." The half-sitting position she assumes when dropping the doll suggests a "toilet situation." Birth and toilet situation have in common the "dropping" of (valuable) bodily content. While we know nothing about the events of Mary's toilet training period, it seems that in the nursery the toilet situations were factors in the outbreak of her anxiety. Finally the association with "extension" (and pushing?) suggests that she may be dramatizing the fact that she has no penis. It is most probable that on entering the nursery school Mary was given her first opportunity to go to the toilet in the presence of boys and to see boys' genitals. Is this the "loss" which she indicates?

"D"

IV

1. Symbols: The doll, first a baby (with shoes), is then used as (*a*) a hand extension (finger?); (*b*) a genital extension (penis or bodily content?).

Of defensive arrangements the following were recognizable: at the beginning and at the end of the hour self-protection by means of regressive *M*-adherence and denial of interest in toys and *Ps*; during the pushing episode, protection of extremity by the use of an (overcompensatory?) extension. The defense arrangement breaks down as Mary is overcome by the impulse to push and by some phantasy of the loss of the extension. We may therefore say:

2. Mary seems to be full of mischief (so far expressed as aggressive pushing), but is afraid of her impulses because she may damage her hand or lose something in the genital region if she does not restrict her sphere of expression and keep close to her mother.

3. The contact offered neither the opportunity nor the appropriate moment for the administration of a therapeutic interpretation. If the mother had not interrupted (a behavior which throws some light on her part in the child's anxiety situations) *Ps* would have tried to get in some kind of verbal contact with the child.

2. *Interview with Mother*

In a conversation with *M* the child's total situation at the time of her visits to the nursery is discussed. *M* relates a fact which she had forgotten to tell me before: Mary had been *born with a sixth finger* which had been removed when she was approximately a half-a-year old. Just prior to the outbreak in the play group Mary had frequently asked about the *scar* on her hand and had received the answer that it was "just a mosquito bite." The mother admits, however, that the child in somewhat younger years could easily have been present when her operation was discussed. Around the time of her anxiety Mary had been equally insistent in her *sexual curiosity*, a fact which speaks for the possible importance at that time of a "scar" association between the actually lost finger and the mythical lost penis.

Her curiosity had received a severe blow when, shortly before

the outbreak of anxiety, her father, irritable because of an impending legislative decision, had *shown impatience with her during her usual morning visit* to him in the bathroom and had shoved her out of the room. She had liked to watch the shaving process and had also frequently on recent occasions (to his annoyance) asked about his genitals. It must be taken into account here that a strict adherence to a certain routine situation in which she could do, say, and ask the same thing over and over again always had been a necessary condition for Mary's inner security.

As to the child's physical condition at these particular times, it appears that bad dreams with violent kicking in sleep (which *M* tries to check by holding her tight and awakening her), and foul breath on awakening had been attributed by one physician to a *bad condition of the tonsils.* Another physician, however, had denied this. The mother and the first physician had engaged in a heated discussion (before Mary) as to whether she needed an immediate *operation.* Before we evaluate all these factors (which add the association "operation" to that of "scar" and explain both an increased adherence to *M* during *F*'s irritable absent-mindedness and an increased fear of doctor-possibilities), we shall report Mary's second contact in order to see which of all these factors her further play will single out as subjectively relevant.

"A"

I

MOTHER

Mary again smiles bashfully at *me*, again turns her head away, holding on to *M*'s hand and insisting that *M* come with her into the room. Once in the room, however, she lets her mother's hand go and as *M* and *Ps* sit down she begins to play peacefully and with concentration.

"A"

II

BUILDING A HOUSE WITH BLOCKS

Mary goes to the corner where the blocks are on the floor. She selects two blocks and arranges them in such a way that she can stand on them each time she comes to the corner to

pick up the other blocks. She carries the blocks to the middle of the room, where she has put a toy cow, and builds a very *small* house. For about 15 minutes she is completely absorbed in the task of arranging the house so that it is strictly rectangular and at the same time fits tightly about the cow. She then adds several blocks to the long side of the house in the following way (Figure 3).

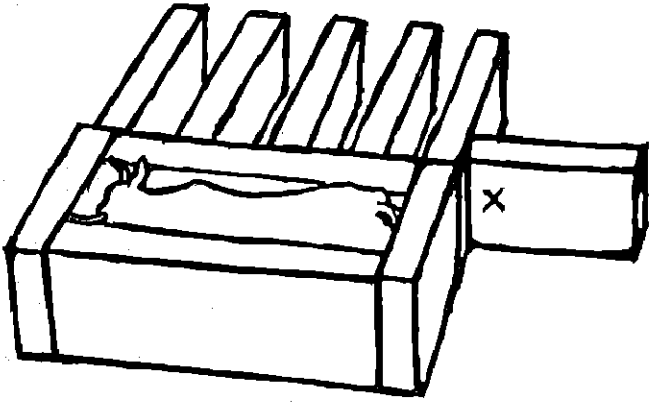


FIGURE 3

At the point marked *X* she adds a sixth extension, shifting it several times to other places, but finally returning it definitely to *X*.

"B"

II

1. Today Mary peacefully concentrates on microcosmic play with a certain maternal quality of care and order. There is no climax of excitement, and the play ends on a note of satiation.

2. Her play has as subject (*a*) the building of a close-fitting stable for a toy cow; (*b*) adorning the stable building with six wings (five plus one).

3. Though *M* is present, Mary does not seem moved by impulses of adherence. She builds freely in the middle of the room, moving to the corner and back without hesitation.

Play again begins with an autocosmic extension, namely creating a base for the feet, and then is microcosmic through-

out. The block configuration suggests, first, the female protective mode; second, a hand with a sixth finger or a foot with a sixth toe.

"C"

II

The mother has remained in the room, not "good technique," but before this can be changed, Mary has concentrated so deeply on her play that it seems better to let her finish it.

Mary, with all her rigidity, balances well standing on the two blocks and bending down. The fact that she has to create a foot extension (protection? overcompensation?) for herself before picking up blocks reminds us of the fact that during the previous contact she had to add an extension (the doll) to her hand before she pushed the objects in the room. Both these acts suggest, of course, the association: scar, operation.

The house is built with a special expression of maternal "care." The five wings, to which (after some doubt as to where to put it) a sixth is added, again remind one of the amputation of her sixth finger.

But this time, although again beginning with the representation of the extension of an extremity, Mary's play does not lead into an aggressive outbreak (and the subsequent representation of a catastrophe). It finds satiation in the building of a female protective configuration. There is a pervading femininity about today's behavior which serves to underscore in retrospect and by contrast the danger dramatized during the first contact, namely, the loss from the genital region of an object used for aggressive pushing. The interesting combination of a handlike configuration with one which we are used to interpret as symbolizing the female organs of procreation furthermore suggests that a masturbation threat (harm to hand or genital if in contact) may be one of the specific experiences to which the little girl is reacting with anxiety.

"D"

II

1. *Symbols.* (*a*) blocks—protection—extension of feet—; (*b*) blocks—building—female protective configuration around

animal—safe body content; (*c*) blocks—extensions of building —six fingers to a hand.

2. *Defensive arrangement.* Maternal herself and master of the microsphere, Mary restores her body's inviolability by representing as restituted the losses alluded to during the first contact: her feet are extended (protected?); the content of her female body (baby) is well protected; the sixth finger is returned to the hand. The play ends on a note of satiety.

"A"

III

GAME WITH *Ps*

Suddenly Mary looks teasingly at *Ps*, laughs, takes *M*'s hand and pulls her out of the room, saying, *"Mommy, come out."*

Ps waits for a while then looks out into the waiting room. He is greeted with a loud and triumphant *"Thtay in there!"* *Ps* withdraws, whereupon Mary closes the door with a bang. Two further attempts on the part of *Ps* to leave his room are greeted in the same way.

(After a while, *Ps* opens the door slightly, quickly pushes the toy cow into the other room, makes it squeak and withdraws it again. Mary is beside herself with pleasure and insists that the game be repeated again and again until, finally, it is time for her to go home.

When she leaves she looks at *Ps* directly, shakes hands in a natural way, and promises to *"come back"*).

"B"

III

1. After being satiated with peaceful building, Mary suddenly and teasingly turns to me to initiate a game. During the game it is noticeable that, in spite of her aggressive hilarity, she does not tend (as she did during the first contact) toward overdoing aggressiveness and then withdrawing from it; Mary is in the real spirit of the game up to the time she has to leave.

2. The game has as content: A man (*Ps*) is teasingly locked into his room alone.

3. This game is macrocosmic indeed. Mary is the master, not only of both the waiting room and my office (and

the connecting door), but also of her mother and especially of me. She takes *M* out of my space and locks me into it.

4. "Thtay in there" are the *first words* she has ever addressed to me. They are said clearly and in a loud voice.

"C"

III

Mary's provocative behavior came very suddenly and with determination, as if something in her had waited for the moment when she would be free enough to initiate this game. What does it mean? The day before I had asked the mother to leave the room in the middle of the hour. Has Mary anticipated the repetition of this, and has she arranged her triumphant going out of the room with *M* in place of my sending *M* out without Mary? The situation does not seem covered by this possible interpretation.

The words which Mary uses when initiating the game somehow resemble the words which the mother told me the father had used when locking the child out of the bathroom during his days of irritation. *"Stay out of here,"* had been the father's angry words. *"Thtay in there"* is probably linked with it, although in addition to the transference to me a double reversal has taken place: from the passive to active (it is she who gives orders), and in regard to the vector (she "encloses" instead of being excluded). One remembers now that from the moment Mary came into my room at the beginning of the first contact she showed a somewhat coquettish and bashful interest in me. Since it can be expected that she would transfer to me (the man with the toys) a conflict which disturbed her usually playful relationship to her father, it seems possible that in this game she is repeating with active mastery ("You thtay in there") the situation of exclusion of which she has been a passive victim at home ("Stay out of here"). (This possibility came to me only after I had reacted to her play provocation, which, of course, I was prepared to do as soon as she would have chosen the moment and the theme. By my play acts I unconsciously took the rôle of the "good father" in a specific, symbolic way.)

"D"

III

1. *Arrangement.* After having assumed the good mother rôle (mother identification) and having protected and restored

her body (restitution), Mary is transferring to me the rôle of the bad father (father transference) in a rearrangement of the situation which created the conflict between them (reversal of active into passive).

2. We do not know why the second contact was peaceful. It often happens that once excessively fearful doctor-expectations are disproved (they are, of course, more easily disproved in less neurotic children), the problems which had been previously presented in all their horrors appear in the form of restitutions: peaceful and playful identification with her mother, protection and restitution of her body in play, and the teasingly revengeful restitution of the play relationship to her father in transference. The child, as it stands at the end of the second contact, has indicated that she wants to be sure of her mother as a haven of protection, of her father as an interesting masculine playmate, and of her body as an inviolable whole in spite of the (at the time intrusive) impulses it expresses and the bodily dangers (operation) experienced and anticipated.

"E"

III

After a play contact which gave the therapist some first insight and the patient some long needed partial play satisfaction, there remain the following therapeutic questions: how normal for her age are the child patient's problems, how much essential stability and adaptability has she betrayed, and how much support can she expect from her environment.

4. *Etiological Speculations*

We may now inquire into the factors in Mary's life to which our attention has been drawn by her play. Now, as at any deeper point of clinical investigation, we seek to gain insight into changes in the following three segments of the patient's life and into their particular functional relation; namely, into the *coincidence in time* and the *mutual aggravation* of (*a*) changes in the *physiological sphere* as they are brought about by decisive epigenetic steps in *growth and maturation*, or by some special disbalancing factor such as *sickness or accident*; (*b*) changes in the constellation or the emotional temperature in the *environment*; (*c*) changes in the person's *conception of his status* in the world, i.e., a subjectivation of causal judgment in terms of guilt, inferiority, projected intentions, etc.

We find in a disturbed adult's life history that a set of conscious and unconscious ideas (a "complex") is subjectifying his experiences, making all changes mutually aggravating, bringing about continuous libidinal disequilibrium and making the individual the easy "traumatic" victim of specific types of occurrences. Usually the "complex" dates far back—and, indeed, we can observe in still undisturbed children that it is one or the other normal maturational crisis, with its complex of wishful and fearful expectations, during which (given a certain lack of psychosomatic or social support) experiences of a specific type or combination become traumatic: perception is subjectified, anxiety increases, defensiveness stiffens.

Once the mechanisms of psychological homeostasis have been upset for a long time and the individual finally is forced to seek help from a representative of a healing method, content and morphology of his sickness show such a multiple relation to an endless number of factors seemingly making one another pathogenic that unlimited material is provided for the discussion of whether the condition has a physiological or psychological basis. Usually, reality forces a simple solution: whatever method by right or might can claim the patient, is able to secure a selection of data and, by interjecting its curative agent, is successful in breaking the vicious circle of pathogenic factors will also determine the only "evidence" of the circle's "beginning" which anybody will ever have.

We hope to approach such problems from a new angle through the study in normal or only temporarily disturbed children of those periods of lowered physiological resistance, those types of lowered environmental support, and those mechanisms of attempts at adjustment which, if occurring together, represent a combination producing traumatic strain.

Mary's disclosure of her personality in her present stage of maturation and state of anxiety, shows her generally somewhat *timid*: in all her aggressiveness she likes to have the retreat to her mother well covered. She is *rigid* in the sense that changes of routine are in themselves upsetting. On the other hand she is playfully *mischievous* and psychosexually *girlish*. There is no doubt that Mary is *dramatic* (an interesting hysterical contrast to some of her compulsive traits) lovable, playful, outgoing, coquettish if master of the situation; stubborn, babyish, and shut-in when disturbed.

Physiological changes: *maturational*. Mary's age and play sug-

gest that she may be considered to be in the stage of childhood characterized (in both sexes) by a rapidly increasing power of *locomobility,* expanding *curiosity,* and *genital sensuality,* which in psychoanalytic literature is called the phallic stage and for which the author, in order to take into account certain developmental facts, has used the terms locomotor-phallic or "intrusive stage" (3).

The intrusive stage, in analogy to other stages, emphasizes sometimes silently, sometimes more noisily the following developmental potentialities:

1. The *impulse* of intrusion (epigenetically emerging with added vigor from the inventory of given impulses), the urge to force one's way into the object of interest and passion.

2. The *sensual* (*libidinal*) *experiences* of increased locomotor pleasure and (often masturbatory) indulgence in phantasies of intrusive conquest.

3. A channel for the *release* (catharsis) of *surplus tension* from various sources in relatively excessive activity, of an aggressive, curious, and masturbatory character.

4. Specific trial and error *experiments* in regard to how far one can go in physically and socially forcing one's way into the sphere of others.

5. A complex of *omnipotence and impotence phantasies* depicting the child either in the unlimited execution of the intrusive mode, and the unlimited mastery over its phantasy object (omniscient master of the universe, conquering the mysterious, taking revenge on giant enemies, etc.) or as the victim of other masters.

6. A new focus for the expectation of danger (*developmental fear*), i.e., an intolerance toward all interferences which may bring frustration to 1, 2, and 3, and danger to the organs involved. If increased by constitutional or environmental factors this intolerance may lead to an abnormal intensity or prolongation of 3 (i.e., excessive aggressiveness or masturbation) and severe anxiety and rage in the face of attempts to break it.

7. *Reaction* formations, i.e., changes in the personality which can be understood as permanent defensive reactions of the ego against those aspects of 1-5 which can neither be quite outgrown nor successfully used in socially approved action patterns.

To the future of the personality this stage (like all the others)

provides a source of experiential wealth and power as well as of danger.

8. The personality is strengthened and enriched by (*a*) the successfully socialized use (sublimation) of the new impulse for such growing abilities and aspirations as are in accord with ego and environment: outgoingness and energy, courage in the face of the unknown, etc.; (*b*) by reliable *reactive* virtues binding some of the excessive energy and the unsuitable modes of the stage, such as self-restraint, protective attitudes, etc.

9. The danger consists in the potential *developmental fixation* which may build the basis for a future (periodic or permanent) *developmental regression,* such as the sadomasochistic dealing with partners in love or work. Reaction formations while creating virtues under certain conditions may imply excessive and permanent inhibition of intrusive types of action, repression of corresponding thoughts and past experiences or more radical measures such as the "turning against oneself" of intrusive acts and thoughts, i.e., masochistic fantasies, often with organic concomitants, or with the provocation of bad treatment by others.

In every developmental stage there is a period when a momentary fixation threatens to become incompatible with progression—the most common kernel of neurotic episodes in childhood. Such neurotic episodes are, of course, similar in content and form to the manifestations of chronic neurotics.

The study of neuroses has shown us that special educational interferences with the general mode of the intrusive stage (such as Victorian tendencies to place special limitations on many forms of locomotor and curious expansiveness, and to react with disciplinary selectivity to sexual curiosity) result in a fixation on the idea of genital intrusion, making the genitals the subject of excessive cathartic acts or that of excessive curiosity and often the consequently excessive repression of both. Such fixation brings with it a prolonged emphasis on the idea and the fear of intruding and on the idea and fear of being intruded upon and, consequently, fears for the inside of the body (as a goal of intrusion) and for extremities and penis as the organs of intrusive aggressiveness. Such a body of fearful expectations becomes, then, a ready factor in the traumatic nature of corresponding experiences.

It must be obvious that this stage offers special problems to the

girl. Led by the intersexual experiences of younger organisms, she too has reached a period of stronger intrusive tendencies, often observed as tomboyishness. During this period clitoral masturbation and phantasies of having or achieving a penis (with all the locomotor and mental prerogatives ascribed to it) are not infrequently admitted. We know that in certain types and under certain cultural conditions this wish remains dangerously determining for life, while often, in a way much less well known, the locomotor-phallic complex seems easily and, so to speak, noiselessly subordinated to the wish for a baby and all the prerogatives connected with *this* possibility. But the physiological and psychological conditions which the girl must accept while imagining for the first time becoming the object of intrusive impulses and developing and libidinizing the (not necessarily unaggressive or passive) impulses of inception, make the problem of female masochism a cardinal one—for personality as well as for culture. Of the mature man and the mature woman we expect that both the sadistic and the masochistic aspects of sexual intrusion have been subordinated to a satisfactory mutuality. This ideal of sexual maturity presupposes the successful liquidation of the phantasies and fears of the intrusive stage, during which to the bewildered child "cruel" and "sexual" often seem synonyms (3).

Mary, as little as she told us so far, has revealed something of the conflict of the girl who does not know whether she wants to be a boy or a boy's girl—although she has done so with more grace and humor than we could expect from the chronic victims of this conflict.

We also understand that during her first contact Mary indicated to us that she had associated the intrusive impulses of the stage just outlined with the idea of *"danger to the extremities"*—an association probably preconsciously emphasized by the allusions to her *lost finger* and the imminent danger of an *operation*. However, during her second contact she dramatizes the development of a female identification and mastery of the fears of the intrusive stage.

In regard to the necessary attachment to one or both of her parents of these impulses and fears ("Oedipus Complex") we can only say that the therapist in this case naturally attracted the father-transference; there seems to be little doubt as to the importance at this time of the child's father as a partner in teasing games and as an object of sexual curiosity. The child's flight to her mother is

by no means free of ambivalence, as further observation would quickly reveal.

Physiological changes: special physiological condition. Mary has not been sleeping well of late. She has severe panics (or tantrums) in her sleep, during which she yells, *"No, no, no!"* Whatever it may be that she is dreaming about, she awakens with a foul breath and there is a suspicion that the state of her *throat* causes irritation and contraction even if there is *no indication for a tonsillectomy.* She has heard of the possibility of an operation which she seems to have associated with the loss of her finger.

Environmental changes. The sudden addition to her sphere of experience of the *play group* puts Mary for the first time in her life in the hands of an adult other than a near relative and into a play situation with boys (at home there is only an older sister). Both her *maturational* state and the *idea of an operation* as associated with the loss of the finger must give the observation of sexual differences (in children) at this moment, even if it has been observed before, a sudden specific pathogenic importance.

At *home* it seems to be the *father's irritability* which the child, not knowing the cause, must have misunderstood and connected with the place where it was first experienced (or because of obvious associations most intensely experienced); namely, the *bathroom.* Thus this experience, too, has been incorporated into the field of *mutually specific factors.*

We shall now offer a tentative diagrammatical summary, (*a*) comprising the interrelation of the historical, maturational, special physiological, and environmental changes, with the impulses, ideas, and fears which we suspect of forming parts of the anxiety content; and (*b*) leading us back to the behavior items which "told us" of these impulses, ideas, and fears (Table 1).

What I have said about Mary, represents the "mental note" which the psychoanalyst would make tentatively at the end of the two contacts. Some parts of the note would stand out in more clarity than others; however, we would expect him to have the courage to modify even his "clear impressions" if further observations demanded it.

As for Mary, the contacts were interrupted by a vacation period after which the observer left Boston. Therefore Mary's situation was carefully discussed with her understanding parents who ac-

TABLE 1

DIAGRAMMATIC SUMMARY

The diagonal (*A-G*) shows the historical, maturational, and environmental changes which seem to be of acute importance in the patient's present life situation. Downward and to the left of the diagonal (*AB-FG*) the possibly and probably resulting emotional emphases are shown. Emphasis *AB* is the result of the mutual aggravation of change *A* and *B*; *AC* that of *A* and *C*; etc.

Upwards and to the right of the diagonal (*ab-fg*) the play acts are shown which made us aware of the actuality and motivating power of the ideas and emotions shown in *AB-FG*: *ab* points to *AB*, *ac* to *AC*, etc. However, play acts are "overdetermined", i.e., correspond to several ideas and emotions.

A HISTORICAL: amputated finger	ab autosphere: hysterical dramatization: loss from genital region protective overcompensation: extensions of hand and foot microsphere: restoration: female protective configuration and six-finger configuration	ac	ad	ae	af	ag
AB 1. fear for (aggressive) extremities 2. masochistic fantasies?	B MATURATIONAL I intrusive (phallic) vs. female protective impulses	bc defense: bashfulness before play expression: exhibitionistic elements in hysterical dramatization transference: provocative mischievousness in play with *P*s	bd	be, ce, de mixture of coquetry (map) and fear (decrot)	bf, cf *defensive:* mother adherence and shying away from toys	bg, cg
AC *association scar-vagina*	BC sexual curiosity and feeling of shame	C MATURATIONAL II curiosity vs. bashfulness	cd transference and sublimation: curiosity in regard to *P*s's train (page 615)		*symptom* play disruption with new mother adherence	*symptom:* anxiety attacks in nursery
AD theory that mother evades the scar-vagina issue because she caused these losses?	BD Provocative mischievousness in play with father	CD curiosity in regard to father's body	D MATURATIONAL III need for (and fear of) father; need for (and jealousy of mother; "ambivalence")		df, cf *transference in mistress play:* transformation of "doctor"-situation into "playing with man"-situation and "rejection" of *P*s (reversal)	dg, eg *regression:* babyish mother adherence
AE association: amputation of finger—loss of penis—operation on tonsils	BE general fear of being intruded upon	CE fear of physical examinations	DE fear dreams ("no, no, no!")	E PHYSIOLOGICAL throat condition (threatened operation)		
AF theory of chirurgical punishment	BF guilt feelings for mischievousness	CF guilt feelings for curiosity	DF feeling of being rejected by father	EF feeling of impending danger	F ENVIRONMENTAL I father's temporary irritability	fg see dg
AG feeling of having been robbed of important *organs*	BG mischievous intentions and anticipating fears in contacts with	CG curiosity in regard to children's genitals	DG need for mother	EG feeling of danger	FG devaluation of "big girl"-hood; need for mother	G ENVIRONMENTAL III new play group (with boys)

cepted (and partly themselves suggested) the following recommendations. Mary's curiosity in regard to both her scar and her genitals required a truthful attitude. She needed to have other children and especially boys visit her for play at her home. The matter of the tonsils called for the decision of a specialist which could then be candidly communicated to the child. It did not seem wise to awaken and hold her during her nightmares; perhaps she needed to fight her dreams out, and there would be opportunity to comfort her when she awoke spontaneously. The child needed much locomotor activity; playful instruction in rhythmic movements might help her to overcome some rigidity in her extremities which, whatever the cause, presumably has been increased since she heard for the first time about the amputation of her finger.

A conversation with the parents a half year after the contacts described in this report did not seem to indicate the immediate necessity for further psychoanalytic observation. A tonsillectomy had proved unnecessary; the nightmares had ceased; Mary was making free and extensive use of the new play companions provided in and near her home. For various circumstantial reasons, she had, however, not visited the original play group again. She had asked for *Ps* often, wanting to know the color of the train he had taken when leaving town.

When Mary, a while later, paid *Ps* a short visit, she was entirely at home and asked *Ps* in a clear, loud voice about the color of his train. She addressed *M* and *Ps* alternately and entered *Ps*'s room without anxiety. Her play immediately centered around the cow again, which, with loving words, was given a tight-fitting stable.

D. Orality in a Boy of Four

Dick was brought to our attention by a physician from a nearby town who occasionally attended the meetings of our Yale study group. His mother, the physician's patient, had complained for the last year or so of a "queer trait" in her little boy; encouraged by our work, the physician, an extraordinarily good observer, familiar with the principles of psychoanalysis, decided to try her eye on the child's play. She invited the little boy, who had never seen her, to come to her office to play and reported to us the five contacts, the first three of which will be given here.

Dick on his fourth birthday was a physically healthy, attractive,

and intelligent child who had a good appetite and slept well. However, he was often dreamy and withdrawn and, with strange indifference, would express rather queer fears and concepts. His parents, warned by outsiders, began to fear that "some day he might withdraw completely and not come out of it." They had had this in mind for some time when suddenly, at four years and two months of age, he calmly refused to speak for 24 hours and for some days after would only whisper. Such "spells" recurred.

It had started during a big family dinner. An uncle's completely bald head fascinated Dick. Innocently, he remarked, *"You haven't any hair on your head."* The adults smiled in embarrassment and hoped he would think of something else, but a few moments later he addressed the bald-headed man again. *"Have you no comb at your house?"* After more such remarks Dick's grandmother took him aside and told him that he was "not to talk about this any more." The child, without any display of emotion, became silent and remained silent for 24 hours, except for some whispered remarks in school the next morning.

Naturally, the parents were worried about such a radical reaction to an everyday occurrence such as the prohibition against talking about a seemingly unimportant matter. On the other hand, it was hard to judge the "seriousness" of Dick's reaction for he seemed neither stubborn, nor worried, nor angry; he simply was far away, apparently uninterested in a means of communication which had proved so troublesome.

One remembered then that on several occasions Dick had been a radical representative of the biblical saying, *"If thine eye offend thee, pluck it out"*—or rather its infantile form, *"If thine eye offend thy parents, pluck it out."* There had been, for example, a time (it was during one of his mother's pregnancies) when he was very proud of and liked to display and brag about his "nice fat tummy." Its unproductivity devaluated the possession of this part of his body, whereupon he remarked that he was going to throw it out of the window and was found pressing it against a hot radiator "to burn it off." Similarly, after one of his little sisters had been born and had taken supremacy in the family's attention, he seemed ready to cast away all the prerogatives of his age and sex. He began to creep, to use baby talk, and even to want his clothes and his belongings to be called "little." Again, he not only tried to deny

a devaluated possession, this time his genitals, but was found attempting "to pull them off," and finally asked his distraught parents to do him this service.

It would be hard to say exactly whether and where all this transgresses the range of variations and episodic peculiarities of normal child behavior. To his intimate observers, Dick seemed to *experiment with reality* in a somewhat less playful and more deeply preoccupied way than most children do. He was interested in parts of the body (the "tummy" of a pregnant woman, the penis) which are of outstanding importance in some cases, but are missing in others without apparent disadvantage for either well-being or prestige. This preoccupation with missing things could take possession of him to such a degree that the majority of his remarks and questions during a given period would indicate a concept of the world in which *missing things* were not the exception but the rule and the dominant aspects. After he had been frightened by the sight of eyeglasses, he asked everyone, including perfect strangers, whether their eyes came out. After he had discovered that a certain old man had false teeth, he asked the same question about everybody's teeth. When he saw a sculptured bust, he remarked that it had "no feet"; on entering a room, he pointed to what looked to him like holes in the ceiling before he noticed anything else. To him, a person did not "have" a tummy or an arm, but "wore" them; an expression which clearly implied the suspicion that these parts could be taken off like clothes.

Thus, at times, his body image seemed to lack a certain integrity. But while his calmness suggested that this lack was simply the remnant of an earlier age, i.e., represented a maturational deficiency, his usual display of intelligence contradicted this interpretation. Consequently, it was necessary to assume that the boy experienced (or pretended to experience) rather something of a disintegration of his body image.

An attempt to test Dick's intelligence had the following result:

> In many instances the child appeared to be concentrating on the task at hand. At other times he seemed almost like a sleepwalker. The very much longer time required for the third trial of the Sequin form board may be attributed to the fact that two or three times he simply became fixated on a block and was unable to continue the activity. When a key

was held out to him and he was asked to name it, he seemed to look right through it; several minutes later it was presented to him again and he quickly and easily gave the name. His successful responses (at the age of 44 months) were, for the most part, at the three-and-one-half and the four-year levels. One certainly has the impression that this is a potentially able child." When brought in during one of his phases of not speaking, "he was very aloof and did not speak a word. He was fascinated by the bridge of blocks built for his own little car and smiled willingly, but would not try one himself; he sat down once or twice, but each time became uneasy and immediately pushed the chair away from him. He looked out of the window a good deal and remained in a teasing mood so that no satisfactory developmental picture could be obtained. He resented all efforts to help him and pushed the examiner's hand away. In general, he looked at everything with a curious combination of attention and dreaminess. He was not eager to leave, but went passively when told to go."

That Dick really had a most emotional interest in the integrity of the objects to whose defects he referred casually became obvious when, during his spells of silence or whispering, he could be observed creating a private world in which he could inquire about missing things and be sure to get a comforting answer. Thus he could be overheard asking himself, *"Has that car a spare tire?"* and answering himself, *"Yes it has, Dick."* This (normal if transient) method of dealing with observable fact he used also in matters of conscience. "Dick, you must not do that.—But I want to do it.—It is better not to do it.—But I am going to do it." Whereupon the "adult" voice seemed to be giving in.

Dick seemed genuinely afraid that certain radiators were going to bite him, and it will be one of the tasks of our play analysis to find out why certain radiators seem to him to be animal-like, others not. This manifest fear that something inanimate might have a hidden mouth to bite him corresponded to the only recurrent dream he liked to report, namely of a certain being to whom he gave a strange name and of which he could only say that it had "no mouth." Incidentally, he spoke about dreams as if they were real. Visiting a friend, he would say, *"I was here last night and played with you."* We know that many children indicate that at least in answer to certain suggestive questions they are unable to differentiate verbally

between dream and reality. What interests us about this child is that he preferred to talk about such borderline experiences, often to the exclusion of all other topics. Cars often seemed to be animate beings for him. "It is too bad that motorcars have to sleep out in the street." For some time he has been differentiating also between men-cars and lady-cars, basing the distinction partly on types of cars which were driven by men or women of his acquaintance. This differentiation, however, overlapped with the one applied to all objects and based on their "yes" and "no" aspects, namely, whether they have a hole (a sink for him is a "no thing") or outstanding parts (a comb is a manifold "yes thing").

All-or-nothing people, who seem ready literally to pluck out the eye which offends them, are hard to deal with. When asked to *keep* it they may insist with equal radicalness on using it. Thus when Dick's parents noticed that to the detriment of his development he had decided to become in all physical and mental respects the likeness of his sister, they initiated a campaign for masculinity, insisting that to have a penis was practical and desirable and nothing to be ashamed of. He took them at their word. He exhibited his penis and, this prohibited, began to shout around his word for penis in a voice the masculinity of which left nothing to be desired; he began to lift the skirts of little girls and finally annoyed adult women visitors by looking at them from the frog's eye-view. The fact that the shouting of the word for penis occurred and was prohibited shortly before he met and annoyed the man who had no hair explains some of the intensity of his reaction to the grandmother's prohibition. For him, *to have a thing, to show it, and to use the word for it* meant three inseparable aspects of its possession. It was obviously intolerable to him that after he had tried in vain to be everything people seemed to like better than a little boy (namely, a pregnant mother, a little girl, etc.) he should meet even more powerful interferences when acting on the suggestion that he become a boy. Not only did he, as we have heard, begin to whisper, but he also wrapped his head in a sheet at night, tried to force his head into a toilet, etc. Biting became the dominant idea in his play; he threatened to bite not only his sister, but also himself, and actually was observed biting a dog's tail.

From such scant material, which gives the mother's complaints (somewhat ordered by us according to areas of expression rather

than chronologically), we derive the following preliminary outline of Dick's personality: He is overcome by his drives at one moment, by prohibiting forces at the next; each time, however, an all-or-none attitude takes possession of him; similarly he changes his rôles of identification easily, although each time radically and completely. Thus in his subjective as well as his objective world he keeps rôles changeable, and parts detachable, introjects easily and projects easily. What danger he may be trying to ward off (if what we describe are defensive mechanisms, and not merely regression and disintegration) is only hinted at in the content of his phobia: *He is threatened by a being with a mouth, which in his dreams* (according to the undistorted wish-fulfilling character of children's dreams) *appears without a mouth.* Mouth and throat become the "zonal" emphasis in a world of dangerous have-nots (have holes) and detachable parts: he has spoken of biting ever since his last experiment in masculinity—at the height of the phallic phase—failed.

We cannot publish a detailed chronological life history of this child. Whatever historical data come to our mind as we observe the child's play will be reported in that context. We must concentrate on tracing the outline in playful and fearful acts of a doubting and often despairing infantile mind which has been unable so far to settle down to a clear differentiation of certain borderlines of individual and social existence. We shall see him concerned with *the differentiation between male and female, between ego and object, between animate and inanimate, between bodily coherence and fluctuating environment,* etc. As psychoanalytic experience and theory would lead us to expect such basic uncertainty will prove to be linked with an *oral complex,* i.e., the fixation on an easy regression to the wishes and fears of one of the incorporative stages. Beyond showing how this reveals itself in the child's play, we will avoid drawing diagnostic or prognostic conclusions from childhood material we are just learning to approach.

Whether the fault lies with the circumstances under which this material was won, or its inner affinity to the early stages of personality development, it is hard to present and doubtless even more difficult to read. The patient reader, it is hoped, will reach some point which can serve him as a bridge from his adult thinking to that of a disturbed infantile mind—and to that of stubborn observers who cannot bring themselves to dismiss "queer" material as meaningless.

The circumstances of observation and the nature of the material make the following methodological changes necessary:

1. An account of the sequence of the child's acts will not be attempted. Instead, an inventory of behavior items (according to the classifications: toys, "life-sized" objects, people) will be given for each contact. Only occasionally will a reference be made which places an act nearer to the beginning or the end of a contact.

2. Except where a coherent plot becomes discernible there will be no attempt to account regularly for the ideational content in the patient's fleeting play.

3. In order to familiarize the reader with the character of this patient's play the inventory of the first three hours is given in toto before the single items are taken up for analysis.

1. *Inventory of First Three Contacts*

a. First contact. Dick, who has never seen the physician before, seems from the very start to accept her in a matter-of-fact way. Pressing into her room, he only asks in a casual way, *"Are your eyes all right?"* and then eagerly, *"Where are the toys?"*—He immediately piles all the toys (except for a large truck with doors) into one box and carries them to the couch.—His mother, who comes after him to ask if it will be all right for her to go away, has to repeat her question before he gives a casual, rather impatient *"Yes."* She says goodbye, but he pays no further attention to her.

(1). *Toys.* Dick takes or points to a number of toys, and with one exception merely makes remarks about them instead of playing with them. He looks from all possible angles at the toy cars, his head close to them, and repeatedly makes the following remarks. "They have no spare tires." "Are they broken off?" "Did they ever have them?" "They are not meant to have spare tires, are they?" "It's all right, they don't need them." "Don't you touch them." "I don't like those cars." "I don't want to play with them."

He treats the red wrecker with a satisfied smile. "This car has two spare tires." "I like this one." He associates to it: "Mother's car has a spare tire."

"There is no water in the toilet." "We will leave the cover up." "We had better put it down again." "I don't have to go to the toilet." "Don't put any water in it."

Dick has left only one toy in the toy closet, a big red truck with

doors. Near the end of the hour he says, *"I can't have it, can I?"* The physician says he can play with any of the toys. *"No,"* he says, and closes the closet door. Later he takes the truck out, opens its back doors, shuts them, and puts the truck back, saying, *"You mustn't touch it."*

He builds a garage for two cars; puts doors on it and two roofs; is pleased with it. After a little, he opens the doors with the intention of putting in two cars, then knocks the whole structure down, saying, *"I don't need it."*

(2) *Big objects.* Dick says, *"Does the chair come off?"* The physician thinks he means the swivel top and replies, *"No."* Dick says, *"Yes it does,"* and demonstrates by lifting the chair. "The table comes off too. You were kidding me when you said it didn't, weren't you?" (He lifts the table.)

He looks at the radiator in an intently exploratory way, eyeing the two ends with some anxiety, and says, *"There is no water coming out, is there? How does it work?"* The physician offers to turn on the steam. He seems alarmed and cries, *"Don't do it!"* The physician says, *"Tell me what you want to know about radiators."* Dick presses against the physician's knees and says in a confidential manner, *"I want to know about yellow radiators."*

Near the end of the hour Dick says to the physician, *"You mustn't take your dress off. I will spank you if you do."*

b. Second (short) contact. Dick again presses eagerly into the room the minute the door is opened and goes instantly to the toys. His acts and words are almost identical with those of the first contact with the difference that he handles the cars with more freedom and only once or twice comments on the lack of spare tires.

About the girl doll he says: *"She has no pants on. She has to go to the toilet. You make her sit on the toilet. She is all through."* He puts her in front of the basin to wash her hands, then puts her in the bath tub. (Her dress is sewed on.) "She is a naughty girl to be in the tub in her dress. She mustn't take her dress off."

c. Third contact.

(1) *Toys.* About the cars Dick says over and over: *"Do they have spare tires? Are they broken off?"* He points to little knobs and calls them spare tires.—He says, *"Have all wreckers two spare tires? I want to break them off."*

He sets the bathroom set up several times, each time hesitating to

play with it. His eyes wander to the dolls, but he turns away again. Finally, near the end of the hour, he announces: *"The little girl needs a bath; she is sick."* He asks the physician to let the water run into the tub; he seems pleased and excited.

He opens the truck doors and says, *"I'd better shut them."* He opens them again and puts half a dozen toys in. He removes them again.

Dick again builds a garage with closed doors and runs a small car against the door as if it wanted to enter. The physician remarks, *"The car can't go through the closed door, can it?"* Dick opens the door, runs a car in and out and in again, leaves it for a while, then takes it out again and abandons the garage with the doors open.

(2). *Big objects.* About the carvings on the arms of the chair Dick says: *"They aren't feet, are they? They won't come off, will they?—They look like your hands."*

"I am afraid it will bite me." The physician asks, *"Who?"* Dick replies, with glee, *"The radiator downstairs."*

(3). *Physician.* Pressing against the physician's knees, he points to big gold buttons (resembling large raspberries) on her dress and says several times: *"I want to bite them."* The physician asks, *"Do you like to bite things?"* He replies, *"Yes, I like to bite sister. I am going to bite sister when I go home today."*—Shortly afterwards he says, *"I want to eat my dinner. Have you any crackers?"* Then he asks: *"People can't go down people's lanes, can they?"* The physician says, *"You mean the red lane?"* He replies, *"The yellow lane. Sister calls it a red lane. I call it a yellow lane.—Yellow is my favorite color."*

2. *First Contact: Analysis*

"A"

I

PHYSICIAN

Dick, who has never seen the Physician before, seems from the very start to accept her in a matter-of-fact way. Pressing into her room, he only asks in a casual way, *"Are your eyes all right?"* and then eagerly, *"Where are the toys?"*

II

TOYS

He immediately piles all the toys (except for a large truck with doors) into one box and carries them to the couch.

III

MOTHER

His mother, who comes after him to ask if it will be all right for her to go away, has to repeat her question before he gives a casual, rather impatient *"Yes."* She says goodbye, but he pays no further attention to her.

"B"

I, II, III

No hesitance on seeing stranger (doctor) is manifested. His mother's departure is even urged with slight impatience. His interest in the physician is fleeting and temporary All his eagerness is directed toward *having all the toys at once.*

In the macrosphere we thus see an exclusion of the mother, a passing by the doctor, an eager intrusion into the strange room; in the microsphere, an eager collection of all the toys (with the exclusion of one large truck) in one place.

The sentence, *"Are your eyes all right?"* is *D*'s individual way of saying, *"How do you do."*

"C"

I, II, III

The impatience with which Dick leaves his *M* behind is in striking contrast to the usual mother adherence displayed by children brought for observation. One is immediately reminded of his reported tendency to pronouncedly deny his interest in persons, objects, or parts of himself to which he had clung the moment before.

His first likewise pronouncedly "casual" interest in *Ps* then, concerns a part of her body which to his mind (how seriously we don't know) could "come off." This remark recalls an episode: A barber not long ago happened to inflict a slight cut on Dick's ear, whereupon the boy would go to barbers only on the condition that they *did not wear eyeglasses,* as if to imply that persons who have detachable parts are more apt to mutilate others. It may be in keeping with such an idea that he feels safer with a doctor if her eyes are "all right." However, all this seems, for the moment, overshadowed by his eagerness to see the toys.

"A"

IV-VIII

Toys

Dick takes or points to a number of toys, and with one exception merely makes remarks about them instead of playing with them.

He looks from all possible angles at the toy CARS, his head close to them, and repeatedly makes the following remarks: *"They have no spare tires."* "Are they broken off?" "Did they ever have them?" "They are not meant to have spare tires, are they?" "It's all right, they don't need them." *"Don't you touch them."*

"I don't like those cars." *"I don't want to play with them."*

He treats the red WRECKER with a satisfied smile. *"This car has two spare tires." "I like this one."*

He associates to it: "Mother's car has a spare tire."

"There is no water in the toilet." "We will leave the cover up." "We had better put it down again." "I don't have to go to the toilet."

"Don't put any water in it."

(Dick has left only one toy in the toy closet, a big red TRUCK with doors.) Near the end of the hour: *"I can't have it,* can I?" (The physician says he may play with any of the toys.) "No." Closes the closet door.

Later he takes the truck out, opens its back doors, shuts them, and puts the truck back. *"You mustn't touch it."*

He BUILDS A GARAGE for two cars; puts doors on it and two roofs; is pleased with it. After a little, he opens the doors with the intention of putting in two cars, then knocks the whole structure down, saying, *"I don't need it."*

"B"

IV-VIII

Dick reveals his interest and withdrawal in the following scale of approaches and avoidances.

Having *piled up* all the toys most eagerly, he does not play with them. He shifts his interest from one to the other, only to *discard* most toys with one or more remarks of a negative character.

He is positive about (*"likes"*) only the red wrecker (which has two spare tires where other cars have none) and *associates*

to it his mother's car (the only reference to an object outside of the playroom).

He *manipulates* but does not play with the truck with two doors (which had been the only toy left behind in the closet).

He really *plays* only for a moment at building a two-door garage which, however, he *destroys* immediately.

At the same time he establishes a verbal adherence to the physician. In addition to referring to missing parts, he protests his disinclination to play with the toys and insists that such play is prohibited, either assumedly by the physician or expressly by himself.

"C"

IV-VIII

Dick's curve of interest and withdrawal recalls the strength of his initial attachment (eager incorporation) to persons and objects, and his seemingly unemotional dismissal and easy change of them.

As he wants to have all the toys but does not take the time to play with them, he insists on continuously talking with the physician, without listening to her answers. His one-sided pursuit of a problem becomes most obvious where he dismisses as irrelevant permissions given by *Ps* and goes on establishing prohibitions. Thus, in spite of his confidential adherence and urgent inquisitiveness, Dick seems to be quite out of touch with the physician, while for the latter, it is not only hard to know what he means but also how seriously he is interested in what he means. Referring at random to the objects at hand, he is obviously speaking of some situation other than the one he presently shares with the physician.

A first hint as to what he may refer to is given in his questions in regard to parts coming off objects and to prohibited acts. These two classes of ideas in almost identical formulations are represented in the questions he asked his mother in rapid succession when she tried to assure him that his penis once and for all belonged to him: "Does sister have a penis?" *"Did she lose it?"* "Will she have one later?" *"Did she do anything naughty to it?"*

His assurances that the cars "aren't meant to have spare tires," that "they are all right," and "don't need them," correspond, then, to the answers the mother reports having given the boy: "Girls are meant to be the way they are," etc.

His whole attitude makes it probable that whatever he wants

to discuss here is related to a conversation he had with an adult. That "the cars are all right" as well as the prohibitions "not to touch them" are brought forward in the way of a now reassuring, now admonishing adult. As we saw, he not only discards *P's* permission to play with (her) truck, but at the same time treats her as if she were not of age.

Thus, first eagerly interested in the toys, he gradually and individually denies his interest in any of them (except the wrecker with the double spare tires) and instead assumes the rôle of the adult who knows well that the play is forbidden, while the physician becomes a naughty girl with bad intentions. Are these intentions projected, i.e., do they represent his original play intensions? In any event, in creating this arrangement with an adult Dick goes one step further than he did in the monologues (overheard by *M*) in which he was two people all in one, the prohibiting adult and the stubborn child. He now assigns the infantile rôle totally to the physician while he becomes the prohibiting adult.

"D"

IV-VIII

The tentative nature of the first references to symbolic equations has been emphasized above. We are therefore stating them boldly here, going out from what seems to us the key to the patient's system of symbols.

Symbols. If small cars without spare tires are associated with *small human bodies with missing parts* (girls, sisters), a truck and a garage are larger bodies and potential *receptacles for smaller bodies* (women, mothers).

Arrangement. Dick, afraid to play because of the meaning the toys have for him, denies his interest in them; he takes unto himself the attitude of the selecting, prohibiting, and reassuring adult and assumes (*projects?*) naughty intentions in the physician.

"A"

IX, X, XI

Life-sized objects: Chair, Table, Radiator. "Does it *come off?* (CHAIR) (Physician thinks he means the swivel top and says, *"No."*) "Yes it does." He demonstrates by lifting the chair.

"The table comes off too. You were *kidding* me when you said it didn't, weren't you?" (He lifts the table.)

Looks at RADIATOR in an intently exploratory way, eyeing the two ends with some anxiety: "There is no *water coming out* is there? How does it work?" (Physician offers to turn on the steam.) He seems alarmed, "*Don't* do it!"

(Physician: "Tell me what you want to know about radiators?") Dick presses against physician's knees and says in a confidential manner, "I want to know about *yellow radiators*."

"B"

IX, X, XI

On the whole, as we saw, avoiding microcosmic play, Dick gives a more courageous interest to some life-sized objects. He does not discard them as he did the smaller objects, but elatedly proves by lifting them that two of these objects (chair, table) "come off." However, when shifting his interest to the radiator, he withdraws: "Don't do it."

Thus his general attempt at showing himself the courageous master of the macrosphere (i.e., of life-sized objects and of the physician) he fails when confronted with the radiator *which has apertures and a watery, noisy inside*. When speaking of this, Dick develops a more intimate bodily adherence to the physician than he does during the rest of the contact.

Verbally, he *"kids"* her in the macrosphere as in the microsphere he had disciplined and reassured her.

"C"

IX, X, XI

In IV-VIII we understood Dick's first reference to the small toys to mean that parts are missing, have "come off." He now demonstrates to the physician that life-sized objects "come off" in toto. These objects have *four legs*, one similarity with animals. The radiator's similarity with animals rests on the fact that he has a (*warm, noisy, water-filled*) *inside and apertures for intake and release*. Dick dares to touch chair and table, but not the radiator.

This brings to mind the explanation Dick's mother had for his radiator phobia. It appeared, she reported, after a *nurse had kidded* Dick to the effect that *a certain radiator* (it was yellow and had four legs) would jump at him and *bite him*.

Probably she used this as a threat in connection with some misdemeanor on his part.

It seems possible, therefore, that Dick in his first contact is introducing us to two aspects of one and the same problem, (*a*) can small objects (children) lose parts "which they need," (*b*) have big objects (animals? adults?) the intention of suddenly jumping at you (and biting)? These questions appear in a conversational context which betrays deep mistrust in and the anxious wish to experiment with adults' prohibitions, assurances, and jokes: His dealing with small objects seemed to lead back to a *reassuring conversation with his mother*, his dealing with big objects to refer to the *nurse's threat*.

"*D*"

IX, X, XI

1. *Symbols*. Chair, table, radiator; fourleggedness, occasional fourleggedness, apertures, warm touch, inner noise: Bodies which move and bite.

2. Years ago a nurse had said a radiator would bite him. "*She is only kidding*," his mother had reassured him. This episode is represented with *displacement* (chair, table, which *do* come off, instead of radiator), reversal from passive into active (the physician is kidded and is shown that certain objects *do* come off), and *denial* (of his fear). The arrangement fails in the case of a radiator, the original object of his phobia. We see: Dick *believed in the nurse's threat more than in his mother's reassurances*.

"*A*"

XII

PHYSICIAN

Near the end of the hour, to physician: "*You mustn't take your dress off. I will spank you if you do.*"

"*B*"

XII

After the short bodily adherence, Dick's interest in physician again appears fleeting, surprising, teasing. She is small and inclined to uncover herself; he is big, and assumes the punishing tone of an adult.

"C"

XII

During the first contact Dick's verbalized interest in the physician's body has proceeded from an organ extension (eyeglasses) which we assume to stand for the part they cover (eyes) to the clothes which may be taken off, revealing the *whole body*. This reflects two of the three foci of interest in inanimate objects, namely, the *partial* focus, "coming-off" parts of small objects; and the *total* one: the "coming off" of big objects.

A third focus, namely, the "insides" of larger objects which could enclose the smaller ones, has not appeared in relation to the physician's body. But we have noticed that all the extreme moments of the contact referred to receptacles. It was the big truck that was *completely ignored* at the beginning of the contact when Dick was so eager to get all the toys (—and to ignore mother and physician). His *only play* concerned the two-door garage which he destroyed, and *open anxiety* was obvious only when the working inside of the radiator was referred to. —(Has his fear of certain radiators originally been the fear of women's bodies? If yes, why?)

"D"

XII

Symbols. As there is a symbolic equation between toy cars and children, there is one between life-sized objects with four legs and animals or adults. The danger threatening the small beings is that something may "come off" them; the danger going out from big beings is that they may move and (at least so says his radiator phobia) bite.

Arrangement. The warning given the innocent physician not to take her dress off, again uses the projective-introjective arrangement which typified the whole hour. *He speaks as if she were intending to do the "naughty" thing he has in mind.* This is as far as the transference has developed during the first contact.

"E"

XII

If we review Dick's behavior with objects so far, we find three themes represented: (1) it is not permissible to touch

small cars (children) with missing parts (genitals); (2) it is not permissible to touch big cars and other receptacles (women) which can harbor small cars (children); (3) it is dangerous to touch large inanimate objects (animals, women?) that have apertures and an inside. In order to see the dangerous ideas behind the avoided objects and acts we may connect tentatively: 1 and 2: a girl is being born from within a mother; 1 and 3: missing parts on small bodies have been bitten off by a dangerous big object; 2 and 3: inanimate and animate receptacles are female; both have insides and dangerous apertures.

3. *Second (Very Short) Contact: Analysis*

"A"

I

REPETITIONS

Dick again presses eagerly into the room the minute the door is opened and goes instantly to the toys. His acts and words are almost identical with those of the first contact with the difference that he handles the cars with more freedom and only once or twice comments on the lack of spare tires.

II

GIRL DOLL AND BATHROOM

"She has no pants on. She has to go to the toilet. You make her sit on the toilet. She is all through."

Puts her in front of the basin to wash her hands; then puts her in the bath tub. (Her dress is sewed on.) "She is a naughty girl to be in the tub in her dress. She mustn't take her dress off."

"B"

This is the longest interest Dick has attached to any one toy so far. Ideational content: Dirty, *naughty*, exhibitionistic girl is taken care of and reproved. Microcosmically the girl is *put into a receptacle* (an act symbolically avoided the day before). This is done in coöperation with the physician.

"C"

Like Mary in her second hour, Dick is somewhat changed. The physician's impression is that he seems to accept in their

existing form the cars without spare tires, an impression that goes well with his maternal play with the girl doll. He is motherly today, perhaps an identification with the physician who the day before disproved his fearful expectations and proved not to be a doctor but a maternal friend.

On the other hand, the girl dolly seems to be pretty naughty —whether she does or does not take off her dress. She has inherited the naughtiness which during the first contact appeared partly in denials and was partly projected on the physician.

"D"

Arrangement. Dick and physician are united in the maternal care for a naughty child. According to our expectations (which Mary did not disappoint) this more concentrated microcosmic interlude should free some expansive energy for a clearer macrocosmic representation of Dick's wishes.

4. *Third Contact: Analysis*

"A"

I

Toys

Over and over: "Do they (CARS) *have spare tires?* Are they broken off?" Points to *little knobs* and *calls them spare tires.*

"Have all WRECKERS two spare tires? I *want to break them off.*"

Sets BATHROOM SET up several times, each time hesitating to play with it. His eyes wander to the dolls, but he turns away again. Finally, near the end of the hour, he announces: "The little girl needs a bath, she is sick." Asks *Ps* to *let water run into the tub,* seems pleased and excited.

Opens TRUCK doors. "I'd better shut them." Opens them again and *puts* half a dozen *toys in.* Removes them again.

Dick again builds a GARAGE with closed doors and runs a small car against the door as if it wanted to enter. (Physician remarks, *"The car can't go through the closed door, can it?"*) Dick opens the door, runs a *car in and out and in again,* leaves it for a while, then takes it out again and abandons the garage with doors open.

"B"

I

Dick's interest, though still fleeting and finally always discarded, remains with each item for one *positive* or *aggressive* statement or move *beyond the first contact's* self-imposed limits. The little have-not cars still have knobs that suggest the possibility there may have been or there some day may be more; while the proud wrecker tempts him to break off his double parts. —Toys are put into the truck, cars without spare tires into a garage, and a (sick) girl into the bathtub. Verbally there is an increase in positive statement.

"C"

I

Before he again disposes of the toys in his usual fleeting, listless way, Dick adds something positive or aggressive to his repetitions, as the following comparison shows:

	First Contact	*Third Contact*
Cars	"They have no spare tires."	"Little knobs are spare tires."
Wrecker	"He has two spare tires."	"I want to break them off."
Truck	"I must shut it."	Puts toys in.
Bathroom	"Don't put any water in it."	"Let water run into the tub."
Garage	Destroys structure before putting cars in.	Runs a car in. (Does not destroy the garage.)

The evaluation of the car knobs, in the generally more hopeful atmosphere of this hour and if viewed in the context of the other symbolical treatment of toy cars, corresponds to a typical self-comforting infantile reaction to the observation of sexual differences: Little boys and girls often expect a penis to be growing inside the girl (the clitoris providing the girl with a tangible hope) while little boys expect all nipples to become breasts. Both vain hopes contain, as is so often the case, some biological truth. The hopeful reference to these knobs is, then, a belated symbolical expression of that one idea in the conversation with his mother which had not been taken

care of in the first contact, namely, the question: "Will she (sister) have a penis later?"

It is interesting that this item, in the context of a general slight expansion of *Spielraum* in this hour occurs in connection with a temptation to devaluate the overcompensatory red car by making him lose what was his distinction. Dick's inclination to sacrifice his proudest possessions (tummy, penis) in order to avoid friction, and to atone for his aggressiveness against his sister must come to mind. (We remember he had tried to pull off his penis at the end of a supermasculine period when he had been told he was "hurting the girls' feelings.") This suggests a defense mechanism of equalization.

"A"

II

CHAIR, RADIATOR

About carvings on CHAIR'S arms: "They aren't feet, are they? They won't come off, will they? —They *look like your hands.*"

I am *afraid it will bite me.*" ("Who?") With glee: "The RADIATOR downstairs."

"B"

II

In the macrosphere (as in the microsphere) Dick's increasingly gleeful interest remains long enough with the subject to reveal further dangerous associations. (*a*) The association between a potentially detachable part of one of the life-sized objects (the chair's "hands") and a part of the physician's body is frankly pointed out; (*b*) the expectation of being bitten by a radiator is mentioned for the first time "with glee."

"C"

II

During the first hour it was already obvious that there was a correspondence between the spontaneous remarks made about the life-sized objects and those addressed to the physician, the idea of the big organism with dangerous intentions being the connecting association. It is in keeping with the aggressive expansion in the microsphere that in the macrosphere a connection is created between an inanimate, life-sized object and

the physician's body. The first contact gave reason to suspect that the transference was developing along this line. (Remember Dick's first question: were the physician's eyes all *right*—which meant—or did they come *off*?)

The exalted feeling of "living dangerously" which accompanies today's adventurous expansion (in the microsphere it was represented by the idea of his wrecking the red wrecker) is climaxed in the queer pleasurable anticipation of the very event which is the center of his phobia, namely, to be bitten by the radiator. It is this glee in Dick which was always one of the most difficult traits to understand. There is little obvious "masochism" in it; rather a playful question in view of the dangers of bi-sexuality: how would it be if the sexes could be interchanged—what would one lose, what win?

"A"

III

PHYSICIAN

Pressing against the physician's knees, he points to big, *gold buttons* (resembling large raspberries) on her dress and says several times: *"I want to bite them."* ("Do you like to bite things?") "Yes, I like to bite sister. I am going to bite sister when I go home today."

Shortly afterwards: "I want to eat my dinner. Have you any crackers?"

Shortly afterwards: *"People can't go down people's lanes,* can they?" ("You mean the red lane?") "The *yellow lane.* Sister calls it a red lane. I call it a yellow lane.—Yellow is my favorite color."

"B"

III

This is the longest and most serious concentration on the physician's person reported so far. With verbal frankness two themes are clearly revealed: a biting wish toward her "buttons" and a consideration of the question of whether one person can be swallowed by another. Spatially, then, both the themes which were first dramatized with inanimate objects have found their way to the human organism: parts of a whole being bitten by a whole; a whole being swallowed by a whole. Verbally the statements are clear and frank; he gives a direct answer to question, while he associates one of the home problems, his playful wish to bite his sister.

"C"

III

The expansion in positive statements makes him reveal a wish toward the physician's dress: to bite her buttons. If we confront this statement (as we did the preceding ones) with the corresponding remark during the first hour, we find opposed: First hour "Don't take your dress off"—This hour: "I want to bite the buttons." The impression is that this expresses an oral interest in the physician's breast (see *E*) although the surprising clearness of the statement can be expected either to hide an as yet undiscernible factor or to lead to bad consequences, such as a belated disruption.

At home Dick has voiced for weeks a wish to "bite his sister's tummy." If we remember that he talked first of his "nice fat tummy" when his mother was pregnant (and that his tummy became devaluated after an unproductive hospitalization for a tonsillectomy) we realize that tummy once meant the bulging aspects of femininity and probably included the breasts as the outside of that big inside out of which the babies come, the very idea which we felt he symbolically approached and avoided from the start.

"D"

III

1. *Symbols*: Little knobs on cars—potential (detachable) organs (penis, nipples) on girl's body.

Buttons on physician's dress—nipples on woman's body (which one wishes to bite).

Yellow lane in yellow radiators	=	red lane in bodies	=	nutritional canal

Life-sized, four-legged objects—female organisms (by whom one expects to be bitten or swallowed).

Arrangement: After having microcosmically arranged during the second contact for the little girl to be the naughty child and for the physician and himself to be identified in standards and function in regard to such children, Dick dares to rearrange the whole inventory outlined during the first contact. (*a*) He establishes equality of equipment among the sexes: the knobs of the have-nots will become sizable parts, the spare tires of the have-too-muches can be broken off. (*b*) The cars are put into the truck, the sick girl into the bath; of

this the system of symbolic equation used so far admits only one interpretation: the small sister is put back into the mother. (*c*) People can not be swallowed by *others*; he is not afraid of the radintor (the nurse was only fooling).

(Are these conditions under which he can express [in transference] his biting impulses toward his mother's body?)

"E"

III

1. On the afternoon of the day of this contact, Dick's nursery school teacher makes an observation which indicates that the interest in the female breast actually is uppermost in the patient's mind on this day and is on the surface of his consciousness, although already subject to the defense mechanism (introjection of prohibition) which we saw especially active during the first contact: *Dick* asked the teacher whether the buttons on her dress could be unbuttoned. Then he pulled her dress apart without unbuttoning it; he "seemed eager and tense." When the dress opened a little, he suddenly withdrew and said, *"No, I can't look in."*

2. The dominating conception in all this play seems to be: there are haves and have-nots in the biological world (yes-things and no-things) and these two groups, in various forms of intercourse, make use of their various extensions and inlets. This mutual use seems to imply a danger to the inviolability of the body as a whole: The mouth can suck and bite the breast, the penis force itself into the body, the baby swell the "tummy" and force its way out of it. These possibilities appear doubly dangerous if one is ignorant or incredulous of the inner or outer laws which are said to inhibit adult bodies from destroying one another and, on the other hand, possessed by impulses—in this case an overwhelming compulsion to think and talk of biting and an equally overwhelming fear of being bitten and robbed.

3. One could have made an interpretational statement to the child at this point, indicating that behind his kidding terrifying ideas were hidden; that these secret ideas had given a traumatic reality to the nurse's "kidding"; that it would be worth while talking over what he meant by biting and what the nurse had meant, etc.

5. *Fourth and Fifth Contact*

After the third contact, in which he had just revealed to the physician certain wishes and fears concerning the *biting* and *swallowing* of one human being by another, Dick contracted *croup*. If not genetically meaningful, this event must have secondarily assumed an unfortunate meaning, namely *oral* (throat) *punishment* for him. When, ten days later, he arrived for his fourth contact, we find him *whispering*, shrinking from self-expression, and armed against temptations as well as punishment. It takes only one more contact, however, to bring him back on the road toward further oral revelations. In order to let his extreme form of shrinking, self-limitation, and encasement stand out against another unfolding of his biting fantasies (which are now familiar to us) we shall briefly contrast, without detailed analysis, the most interesting corresponding items of the two contacts.

6. *Fourth Contact: Analysis*

"A"

Dick is not as eager as usual to enter the room. He has not taken his heavy snow suit off, seems extremely pale and apathetic and *speaks only in whispers*.

The physician suggests that he take off his snow suit and offers her help. He refuses, whispering, "I will keep them on anyhow. *I can sit out here until I take them off.*" From time to time he smiles at the physician, but stops as soon as she smiles back.

After a while he enters the room with all his clothes on. When asked whether he is hot, he whispers, *"I don't want to take them off;* just my sweater." Takes cap off so that sweater can be taken off; *puts cap on again* and keeps it on; he is plainly hot and uncomfortable for the duration of the contact. For the most part he wanders around, or moves back and forth on knees.

At one point he suddenly becomes more active; puts all square BLOCKS IN A ROW, end to end, and producing aphonic noises shoves the line of blocks along the floor by pushing the rear blocks.

Then he builds a GARAGE, runs the little red wrecker into it, and shoves the line of blocks so that they *block the garage* and, lying on his stomach and whispering, gazes into it.

Looks under GIRL DOLL'S skirts and examines her *sleeves*. Puts her in the bath tub, then on the floor. Puts BOY DOLL beside her. Puts *boy in tub*. Puts a *block in front of the tub*.

Lying on back, examines TRUCK intently. Suddenly in a *loud, clear voice*: *"That isn't a truck!"* He points to a little wheel that hangs down from the underside of the truck. (Physician asks, "What is it then?") *Whispering* again: *"It isn't anything."*

"B"

His interest is first concentrated on *himself* and on keeping himself enveloped in clothes and excluded from the physician's room. Then in sudden moves, while still keeping himself in a fortress of clothes, he is playing for moments with more concentration and more independence than ever before. He does not destroy or discard, but (whispering) watches his play arrangements. Autocosmically enveloped and without voice, he puts the *wrecker* in the garage and the *boy* into the tub and *blocks* both with blocks.

Verbal. Whispering and aphonic noises. The statement, "I can sit out here until I take them off" contains a *self verdict* in complete identification with an illusory adult judge. The only loud statement contains a *complete negation*: A truck with a spare wheel isn't a truck—it isn't anything.

"C"

The interrogation and bodily adherence to the physician is broken in this hour. Withdrawn into himself and enveloped in his clothes, he is able to concentrate on longer independent microcosmic play than before. The play is, in a certain sense, *narcissistic* in that he represents in the microsphere what happens in the autosphere: the objects of interest (himself, wrecker, boy-doll) are encased.

(Is he afraid the physician will examine his throat? The past has not given him any reason to expect this, nor has he himself ever treated the observer as a "doctor.")

"D"

	Autosphere	*Macrosphere*	*Microsphere*
1.	Head covered with cap. Body enveloped in clothes. Voice covered by whispering.	Detained in waiting room.	Beloved red wrecker and boy doll in receptacles with exit blocked.

The boy is unborn, (not the girl).

2. *Arrangement.* Dick today is completely identified with the voice of conscience. In the first hour he had projected all guilt content onto P_S, in the second hour onto the girl doll. In the third hour he had admitted aggressive wishes while already offering atonement. He now arrives at a deadlock of complete self-restriction and revengeful stubbornness: If I am not going to take my clothes off, I cannot enter the room and play. Therefore, I am not going to take them off. Dick's mother reports that she had blamed his carelessness in running around with too few clothes for his croup. The self-encasement of this contact, therefore, seems overdetermined, a queer mixture of self annihilation (punishment for last hour's references to the physician's body and implicitly his mother's body), security in self-restriction (he cannot do any harm) and stubborn, vengeful over-obedience (I am not supposed to have few clothes on,—I shall have too many on). That the overdetermination is necessary to produce the performance, is obvious from the fact that this extreme behavior does not occur at home (where his sickness spoke for him) but at the physician's office. It allows us to see some of the components of those "whispering" episodes because of which Dick was brought for treatment: the pious overdoing of a prohibition both as a defense against temptation and a veiled vengeful satisfaction. The whole mischievous energy pent up in such dramatized self-restriction becomes obvious in the following "criminal" features of the fifth contact.

7. *Fifth Contact*

"A"

Enters room, *lively, talkative,* with hand (through clothes) on genital. *"The floor doesn't come off, does it?"*

"You (PHYSICIAN) *haven't any penis."* ("That's right.") "Ladies haven't." *"Sister hasn't any penis."*

"I'll show you mine." *Exhibits himself.*

"You undress the GIRL (DOLL). You bite her tummy, her hand, her arm, her head, her feet, her behind."

(Pointing to FATHER DOLL): "I am going to take his hat off!"

"B"

The relationship between the microcosmic behavior of the

day before and this contact's macrocosmic behavior is clearly one of complete reversal. Whether or not his self-encasement was a relieving atonement for the weakness of the flesh or—as an infantile Nirvana—a triumph of that weakness, today he manically challenges the dangers which he fears most deeply. His questioning and teasing in regard to things which "come off" or part of which "come off" assumes a truly macrocosmic form: at least the floor on which we stand won't come off! Consequently the autocosmic fears only symbolically expressed in the previous contacts are now clearly referred to and disproved: I can touch and show my penis! Such safety assured, he not only does not shy away from the idea that girls have been robbed and are bitten by women—he enjoys the idea.

It is interesting that it is in the context of such a disproval of autocosmic dangers that he pays attention, for the first time, to the father doll: he threatens to take off his hat (in dreams, according to Freud, a penis-symbol). Of further interest is the contemporaneousness of self-encasement and voicelessness in the fourth contact, and that of emancipation of voice and exhibitionism in the fifth. We remember that his first whispering spells occurred on the occasion of his being forbidden to talk about a man's hairlessness; this happened shortly after he had been denied the right at the height of his phallic period to show his penis, to shout his word for penis, and to look underneath the girls' skirts because "it hurt the girls' feelings." The voice which exhibited, as it were, the penis in word-magic and hurt the feelings of female beings had a phallic connotation in more than one sense: The shouting, it seems, had not only *exhibitionistically conveyed the content penis*, but also as a *functional expression dramatized the intrusive mode* (*intensity* of voice and probably *phonetics* of penis-synonym) with the sadistic connotation of hurting girls.

About the time of these contacts the writer met Dick under the following conditions. He went to Dick's town in order to observe him in his play group. While searching for the teacher he suddenly heard strange shouts and terrified yells. Looking into a nearby room, which proved to be the toilet, he saw the boy (Dick) *exhibiting his penis and at the same time shouting* into the ear of a girl of approximately his age. The girl was in a panic, he in a strange state of compulsive acting without much affective participation. (Being visual rather than auditory, the observer remembers Dick's facial expression but not the sounds of what he shouted.)

"D"

1. *Symbols.* Formerly symbolic ideas referring to the female lack of a penis and his own phallic pride appear undisguised. The modal synonymity between *shouting* and *exhibiting* and between *missing part and bitten off part* is expressed clearly.

2. *Arrangement.* Manic challenge, suppression of voice of conscience, denial of fears.

"E"

If the observation had been continued at this point, the challenging of the father figure would probably have proved to be the beginning of the revelation of a complex of ideas connecting his father with the radiator phobia. Other items which lead beyond the intended comparison between the fourth and the fifth contact have been omitted here.

Because in most case abstracts the reader is aware of the lack of detailed accounts transmitting the "feel" of the observational situation, we are concentrating here on a few detailed accounts at our disposal. The reader will now doubtless feel that his hard-won familiarity with Dick's mind should be rewarded with an abstract of his further treatment and development. This cannot be given here. Dick was recommended for thorough child-analytic treatment for which it was necessary to wait until his family's impending move to a larger city. *As this is being written the treatment is in process.*

A second unsatisfactory aspect of a detailed clinical account would not have been improved by a continuation of our report. On closer observation clinical material becomes more elusive. Every moment of attention, every step in the analytic direction is apt to bring to light a new element which proves to have been all-pervasive from the beginning. Descriptive and analytic restatements are necessary; reconstructions and interpretations, as they gain in volume, change in structure.

What is it then that we have set out to show: the emergence of an all-pervasive and only intra-individually logical (i.e., psychological) complex of ideas which alone gives the single reported behavior items symbolic or metaphoric meaning. Play acts of the kind Dick produced before our eyes are, of course, continually produced by other children in other situations, where they may mean something else or nothing beyond their face meaning. Small cars can

"mean" small cars—within less fixed and less rigid configurations asserting themselves over shorter periods and through fewer areas of expression: The *prolonged and expanded sacrifice of the "real meaning"* of surrounding objects for the sake of their metaphoric meaning within a vicious circle of magic ideas is the mark of an emotional arrest.

Dick's dominating ideas express an *"oral complex."* He not only often speaks of biting; he betrays in addition to the world of physical facts as he knows them to be, an image of a world in which the biting wish is universal, its magic consequences unavoidable. When he is in panic, it is because of a radiator that will bite; when he dreams, it is of a being without a mouth. When proud, he shouts; when depressed or oppressed, he whispers. In demonstrating the emergence of this complex in play contacts, we hope to have demonstrated how, with little interference from the side of the physician, the dynamic interplay of two pairs of psychological powerfields forces the complex to the surface, namely, the interplay of *resistance and transference,* and that of the *level of fixation and the level of arrest.*

To begin with the latter pair: The level of fixation is that system of ideas, wishes, fears, defense mechanisms, ways of thinking, differentiating, experiencing which belong to a certain earlier period of childhood and the magnetic power of which is apt to exert again its way of organizing experience and action whenever a consolidation on a higher level of experience and action seems blocked. In Dick's case the fixation level is the second oral (biting) period. His level of arrest, on the other hand, is the intrusive stage, the developmental stage which proves unsurmountable to him. Dick is so hard to understand not only because his level of fixation is genetically an early, structurally a primitive one; the greatest difficulty arises from the fact that his inner world combines and synthesizes contents and principles of organization derived from both the level of fixation and the level of arrest. Thus we find phallic trends expressed in terms of the oral level (of fixation): i.e., his phallic-locomotor aggressiveness and the problems of sexual differentiation are represented as temptations to bite female persons and the fear of being bitten in turn. It is the *intrusive mode* which characterizes for him the functions of both the fixation zone (biting mouth, hurting voice) and the zone of arrest (the dangerous and endangered phallus). It could be argued that such irradiation of the intrusive problem had

its center in the phallic stage and only regressively mobilized oral associations. Certain data which cannot be produced here, suggest that intrusion was a problem from the start. However, as we would expect, the conflict of intrusion found its climax and caused a general arrest and disintegration at the intrusive stage.

Caught between the phallic and the oral complexes as though between Scylla and Charybdis, Dick is unable to see how he can avoid the point where these two complexes touch; namely in the idea of hurting a woman, thus both losing protection and provoking punishment. The concept of the world which he reveals and which is not understandable with ordinary adult logic is an attempt to *synthesize the level of fixation and the level of arrest in order to derive a design for self-preservation.*

In the contacts with the physician, then, this "private world" of the child only slowly asserted itself against a *resistance* which tried to isolate it by avoidances and to keep it in a symbolic and metaphoric disguise; only gradually was it represented in connection with the *physician's person.* We have seen that the various aspects of this connection were *transferred,* in a certain disguise and with wishful changes, from former experiences with relations to other women (mother, nurse) and did not originate in the therapeutic situation, except in so far as woman doctor—nurse—and mother—situations have common attributes: they all favor associations such as: child's unsatisfied interest in woman's body, child's secret wishes in regard to woman's body, woman's investigation of child's body, threat to child's body, etc.[14]

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[14]In Mary's case we saw how the image "man who plays with me" overcame the doctor association and favored the transfer of her conflict with *the temporarily less playful father; while John, armed against all doctors,* could not help delivering the secret to me which belonged to his father. But the material, especially in regard to the confession compulsion expressed in *"A", is influenced by* the initial "doctor"-expectations of the child. In the psychoanalysis of adults, too, there is a situational connection between the patient's very first associations and memories with the enforced infantile position into which he is asked to revert: the position of lying down, the sacrifice of upright and aggressive motility, the suggestion to lay himself open psychologically before a person who in his turn guards his integrity, the suggested lowering of the critical threshold and of cultural standards in expressing uncritically the flow of association. If not a verbal suggestion, *all this certainly represents a situational emphasis* which should be kept in mind when evaluating the first selection of childhood material emanating from the patient's associations and resistances.

The inventory of symbols revealed in Dick's developing play-manifestations rather clearly indicates the boy's concern with situations in which biological haves are threatened by the oral eagerness of the have-nots. Beyond this, only further analysis would reveal the syntax which in the patient's mind gives this inventory some kind of logical order. The reconstruction of what in the patient's mind is the cause of, the condition for, the temporal successor or predecessor of other factors, and how such psycho-logic compares with the historical sequence of events is a task accomplished only with painful slowness. Up to now we know approximately what the patient is talking about; but we do not know what he is saying, i.e., whether he is reporting the past or imagining the future, and whether he is representing what he is doing in such a picture or what is being done to him.

One example of a possible historical reconstruction would be this: The boy saw his sister nursed. He felt strange urges and aggressive impulses, only parts of which probably stood out consciously, as wish for the mother's breast, anger at the sister's favored position, aggression against his mother, etc. Factors of his stage of development (intrusive, locomotor, phallic), of his constitution (oral? schizoid?) and of his personality development (projective and introjective mechanisms) gave this wish dangerous connotations. For example, unlike his sister, he had teeth, a fact which may have been actually pointed out to him. This would be a danger threatening his mother.[16] However, his thoughts seemed also dangerous to his sister as it meant to take her nourishment away, an idea which fused with the other wish, namely, to send her back into the mother's body. His projective introjective ways of experiencing, then, intensified by the oral problem he was faced with, caused him to experience not only what mother and sister would feel if victimized by him, but also made him expect that they wanted to do to him what he wished to do to them.

It may have been during attempts to experiment with and to synthesize in play, theories, phantasies, and strange habits, such ideas of attacks and counter-attacks (in which he alternately identified himself with a dangerous mother and a small, toothless, penisless

[16]The first 20 hours of Dick's psychoanalytic treatment were signified by the fact that he had every toy bite every other toy, with two exceptions: *a baby doll and a toy cow never bit one another.*

baby) that the nurse helped by her threat to create a focus for all his anxieties in a radiator phobia. The idea that the radiator could jump and bite appealed to an always easily mobilized primitive level of the boy's mental life on which everything with noisy insides, a warm touch, pipe systems with water, etc., whether inanimate or animate, was somehow identical; while, like all objects of phobias, it also made more tangible, more impersonal, and more discussable, those vague and secret fears which could not be discussed with the protecting adults because they concerned just these adults: the radiator stands for what the child could expect the adult (mother) to do to him if she knew what he secretly wanted to do to her. On the other hand, while an unseen source of danger, this hypnotically attractive phobic object by no means created comfort, and the efforts at eradicating and denying the whole conflict could not relax. Dick dreams of a being which has no mouth at all and we recognized some of his phantasies as picturing a world in which there are no differences between the sexes and between big and little: everybody has and is everything and there need be no envy, no threat. Thus, beside a fear world in which vague dangers are pinned down to tangible objects and into a context with some kind of logical structure, we also see traces of a wish world, another synthetic product of the child's despairing ego.

Other observers and the reader may have arrived at other possibilities of reconstruction. But if we ask at this point who is right, there is only one answer: the patient. Only continued work with him could narrow down possibilities to probabilities and bring about that psychological insight, the formulation of which creates the feeling of high probability in the experienced reader, and if transmitted to the patient, clears his vision into the past and vitalizes his expectation of the future.

E. Destruction and Restitution in an "Epileptic" Boy of Four

With the following description we merely introduce the second phase of treatment, namely, the period following the decision to proceed with the psychoanalytic procedure proper, and the time of first interpretations. With the focus shifted, we shall abandon the detailed representation used so far.

Fred was entering the disquieting period of locomotor and sexual

development usually associated with the age of four somewhat prematurely before his third birthday; we have tried to characterize this period briefly above. Mentally, his development ratio was 125; he was especially advanced in his verbal expression. Physically excellently developed and well nourished, he was easy to handle—especially if, as was often the case, he was given his own way. Certain sadistic characteristics mainly expressed in teasing and occasional tempers had been outspoken for years; but nothing would have induced either his parents or his pediatrician to suspect the clinical syndrome which now suddenly emerged, namely, "epilepsy."

For some time Fred had seemed to try in provocative games and social experiments to see how far he could go in playfully hurting others and in suffering their reactions. Although he enjoyed exploring by play and error the outer limits for the manifestation of an obviously pressing aggressiveness, he had a low tolerance for situations in which he actually hurt somebody or was actually hurt by somebody. As his silent paleness seemed to indicate, such events forced him to suppress in too short a time and to turn against himself the overwhelming aggression for which he was trying to find a social form.

The tension created by these manifestations which were neither in quantity nor in quality really abnormal, was heightened when one day his grandmother arrived in town for a long visit. She was even more anxious than his mother lest he hurt himself or get hurt; and special restraint was put on Fred's activity because she was afflicted with a heart disease. Fred tried his best, but soon increasing complaints from the neighborhood indicated that he had found a new field of activity. When he hit a boy with a shovel, he was ostracised in the neighborhood. It was shortly after this social trauma that he again went too far in his teasing attacks on his mother and, finally, on his grandmother.

One morning, in the presence only of the grandmother, he climbed on a windowsill and threatened to jump out of the window. Startled, the grandmother tried to reach him but fell on the floor, for the first time in his presence suffering one of her frequent heart attacks; she spent several months in bed, seemed to recover, but suddenly died. *"When I saw him standing there, something hurt in here,"* she had kept repeating over and over.

A few days after the old lady's death, Fred's mother saw him

pile up his pillows before going to sleep, in a way in which his grandmother had done in order to feel more comfortable. In the morning, at the exact hour he had been awakened five days before by his mother's crying over the grandmother's death, he was heard making strange noises and found in a terrifying attack. His face was white, his eyes glassy; he frothed at the mouth and gagged. Finally, he shook all over and lost consciousness. To his mother he looked like her dying mother, but the hurriedly called physician diagnosed his symptoms as convulsions, ascribed them tentatively to bad tonsils, and administered an injection.

Soon two further attacks (usually beginning with the twitching of the face and subsequent clonic convulsions on the right side) followed at intervals of four weeks and six weeks respectively. The first attack lasted 20 minutes, the second 45. Immediately after the third, which lasted more than two hours, Fred was admitted to the hospital where he was diagnosed as an "idiopathic epileptic." However, neurological examinations were entirely negative except immediately after the attack. Fred, they emphasized, was an excellently-developed and well-nourished boy of above average intelligence and remarkable sociability. Dismissed after a few days of rest and observation, Fred was free of attacks for several months until, after two relatively less violent seizures, he again had to be hospitalized because of an attack at the time of the anniversary of the grandmother's death. The diagnosis appeared gradually modified as *"Idiopathic epilepsy with psychic stimulus as precipitating factor"* and the patient was recommended to the Department of Psychiatry and Mental Hygiene where he received treatment first from Dr. Felice Emery and then from this writer. During these treatments there were many minor (mostly staring) spells; major attacks occured only five days after his psychiatrist "had gone on a long trip," i.e., had moved to another town, and again, a year later, five days after the present writer had "gone to the Indians," i.e., on a field trip.

I shall first report on the psychological development of the case and then quote a neurologist's interpretation of the medical data in the light of our study.

Fred's parents had tried to explain the grandmother's disappearance by saying she had gone on a long trip. The boy, in spite of having seen the coffin and having witnessed the family's mourning, accepted and clung to the version that the grandmother had not

died at all. But children betray their knowledge of such over-eagerly accepted adult lies with an uncanny sense of humor. Thus, one day when his mother asked him for an object which he had mislaid he said, *"I guess it has gone on a long trip."* During the same period in his nursery school he was noticed building coffin-shaped houses whose openings he would barricade in a way corresponding to a death configuration, generally observable in play and in rituals of primitive people. It seemed clear that the boy "knew" and that this knowledge (or what he tried to do to it) was the "psychic stimulus" the physicians were looking for.

Before every major or minor attack, Fred's aggressiveness would increase. An object would fly out of his hands, sometimes creditably "without his being aware of it" and strike somebody's head. The usually affectionate and reverent boy at such times would indulge in violent attacks against parents and against God. "Did grandmother have a good heart when she was a child?" "The whole world is full of skunks." "I don't like you, mother." "I hate God." "I want to beat God." "I want to beat heaven." After the attack the boy would indicate that he had experienced his unconsciousness as death. He behaved as if he had been reborn, smiling, loving, obedient and reverent—an angelic child.

I shall first present excerpts from Dr. Felice Emery's notes in order to contrast the transferences which the boy established to this woman psychiatrist and then to me. The following development in play of two dominant ideas; namely, "burning and attacking psychiatrist" and "building a castle" reflect, it seems, the *destructive-restitutive* conflict in the boy's mind.

1. *Excerpts from the Patient's First Ten Contacts with Woman Psychiatrist*

I

Fred, asking psychiatrist to smoke a cigarette, becomes extremely interested in the way it *slowly burns down.* He asks *Ps* to smoke two more cigarettes and watches *intently.* "Why don't *you smoke the burning end?*" he finally asks.

While watching *Ps*, he touches the telephone and she is forced to give him the instruction that the telephone is not an object at his disposal. Shortly afterward he suddenly reaches for the telephone and seeing that *Ps* is *startled* he says teasingly, "I wasn't going to touch it: *I fooled you!*"

II

"I'm going to *make you smoke* every time I come."

When *Ps* picks up a toy on the floor, he moves a screen so that it falls over her. In great excitement he crawls under the screen (which he calls a *blanket*), yelling, "I'm climbing up on top of you." Then he tries to stand on the screen but breaks through, dropping one and a half feet. He *crawls in and out* through the hole and calls it a window.

In the afternoon, at home, wandering around in a daze "as if hypnotized," he asks his mother what the difference between people and animals is and seems especially interested in *animals which jump at others*, such as tigers and dogs.

(He is coercive, aggressive, intrusive in thoughts and acts which imply: making *Ps* smoke the burning end of a cigarette, startling teasing, fooling her and climbing on top of her. A sexual meaning is discernible—underneath the screen he tries to climb "on top" of the psychiatrist calling the screen a "blanket." Is he afraid of the animal, the tiger, in *himself?*)

III

"When I put the *screen* over you, were you all *burning up?*" "Was your house ever burnt up?" "My house was never burnt up." "I want to go to the toilet."

(Note the associations—sexual act: burning; burning body; burning house; also the urinary urge at this moment.)

At home, just before falling asleep, he again refers to an animal aggression. "Cats are made the same as dogs and dogs are made the same as cats." "Can dogs climb trees?" "Why do they like to *chase cats?*"

IV

"I would like to set the whole *building on fire.*" "I'm going to set fire to your skirt."

"Let's *build* a castle."

(Note the association—setting fire to building: setting fire to psychiatrist's skirt. In view of this repeated analogy, we may expect an analogy of—building a castle: building a body.)

In the evening, asking again where there are tigers, he says to his mother, "The night is attached to the day. The day is attached to the night. The sun is attached to the sky."

(The constructive idea of building a castle has a counterpart in that of a coherent universe.)

V

"Could you smoke the cigarette from the wrong (*burning*) *end?*"

"I'm going to *undress you*. I'm going to *burn you*."

"Let's build a castle."

VI

"I want to smoke" (*takes one puff anxiously*). "That's enough.—Do *firemen* ever get *on fire?*"

Hits a cigarette with a bar. "Is it *dead* now?" (burning: dying) "What *part of a cigarette burns?*—*What parts of a* house burn?" (burning cigarette = dying cigarette; burned house = dying house?; burned body = dying body?)

Stamps his feet and yells, "I am not going to leave till you *build a castle.*"

VII

"You smoke a cigarette while you build a castle." (The destructive and the constructive ideas merge; see VIII and IX.)

"Would you turn into ashes if you would burn?"

He throws a ball of plasticine at *Ps*, yelling "I will *hurt you* and you will hurt me." After she has "hurt" him, he puts the chair in front of her, "You are *in jail.*"

"Please walk with a creepy walk."

"There was a *lady who fell out of the* hotel *window* and she broke her hands, her legs, her body, her head. Wasn't that terrible?"

"We don't need a castle today."

(He wants *Ps* to walk in a creepy walk, which means to be an old woman, and he makes her hurt him and be put in prison. Is this the inversion in play of the fear which governs him, namely, that he will be put in jail [coffin, dark place, *tomb*] for having killed his grandmother by playfully threatening to jump out of the window?)

VIII

He hits the castle, with the words, "Does that hurt?" (Confirms the association—house: body.)

IX

"You *smoke four* cigarettes at once and build a castle that is round and has a door at each end."

He tries to light a match by stroking *Ps*'s cheek and by placing a match in her nostril. "Let's have a big flame."

Three times *Ps* builds a castle and three times he steps on a table and jumps on the blocks. From there he tries to jump on *Ps*.

(Repetitions with "orgiastic" dimensions: four cigarettes burn; three castles are destroyed; he tries to jump on *Ps* and actually to set fire to her.)

On Day III, the first association of burning and coitus had been followed by the wish to go to the toilet. Ever since, the psychiatrist had noticed a certain genital excitability in the boy as manifested in his repeated sudden urge to urinate, and in his clutching his penis. She now gives him a first interpretation by way of asking him whether to burn something, to destroy something, and to scare or jump on a woman gives him sensations in his penis. She thus approaches what must be most unconscious and least communicable to him and, furthermore, can be assumed to be one of the outstanding etiological factors in his sickness, namely, the strong phallic-locomotor emphasis at the time of the grandmother's death (and ever since).

To this question, Fred, surprised, reacts much like Dick "*I wish I were a little girl,*" he says. Then, transferring this idea of partial self-destruction and self-victimization to the house, the representative in play of a restituted body, he points to one of the longer blocks on the castle and asks, "Why is this sticking out?" He pushes it back. "Will that hurt the castle?" "Have you got a saw? I want to saw this off." He pushes a long block against it. "Does that hurt the castle?"

(He thus seems to experiment with the two aspects of the possession of a penis: who is hurt more, the male who loses it, or the female against whom it is used?)

Ps does not give him this explanation but merely remarks, "A castle made out of blocks falls apart rather easily. It is different from a person's body which can not fall apart in the same way." "Why doesn't it fall apart?" he asks. "Because the body has grown that way itself; every part is needed." He doubts, not without reason: "You need your eyes. Will your eye drop out?" "No—your eye won't drop out." "When it gets black and blue—what happens then?" "If your eye gets black and blue it heals."

In leaving *Ps* on this day, Fred says to his mother in an enthusiastic tone, "It's the biggest castle we have ever built."

(The castle was *not* bigger, *but* the interpretation had made the restitution more convincing.)

X

With this reassuring contact the themes of burning and building lose their central position in Fred's play with the therapist. *Another content, more clearly betraying the fear of the dead* grandmother, takes their place.

(We consider the fact that the content changes and approaches pathogenic material more courageously, a sign that the right interpretation took place at the right time.)

Fred now plays that an imaginary *lady* who is far away tries to call up 15 times a day. He wants *Ps* to go over to the house of that lady and break her telephone *because the* lady tries to call and to tell him that she is going to come and set him on fire or that she is going to send a policeman to arrest him. (We remember he had tried to set the psychiatrist on fire and, in Hour VII had jailed her, asking her to "walk with a creepy walk.") "We had better go off *on a long journey so that when she comes she won't find us here.* We had better take twelve gallons of gas."

While the imaginary overland connection to the lady takes the center of his play with the psychiatrist, at home his interest shifts to communication with *heaven.* "How does God tell you to be good? Heaven is higher than the clouds." As if incidentally, he *also for the first time begins to ask about his grandmother,* what she would look like now, would she look old, etc.

Soon *Ps* thinks the time has come to talk about the grandmother. Using his suggestion to write his name on a blackboard, she asks for his father's name, his mother's name, his grandmother's *name, and when he pronounces the latter with* special tenderness, she adds quietly, "Your *grandmother died,* didn't she?" Fred explodes, "No, she didn't die—she went away—*didn't she go away? Why did she die?* She was sick in my house. Did she die in my house? Is she in my house now? Well, where is she? Do you *mean that I will* never see her *again? Let me see her.*"

Ps explains to him the impossibility of his wish, and in spite of his seeming to lose interest abruptly, insists on telling him that he must be thinking that he had done some harm to his grandmother. He answers decisively, "No—I didn't do

anything to her," but then acts out his confession, as most children and some adults do: He climbs on the table (a conference table), stamps up and down the full length of it, and yells, "Who is making that noise? Can they hear it outside? What will they do if it disturbs them? If they did come in I wouldn't be quiet." Then menacingly coming up to the end of the table where *Ps* is sitting, he suddenly crouches down, climbs into her lap, and says quietly and anxiously, "Why did I stop here?" *Ps* repeats her explanation.

In the evening of this day at home, the boy begins to mourn as if he had never heard before that his grandmother was dead. He cried incessantly, asked why the grandmother had died, and why they hadn't taken her to the hospital to save her. "I would like to open grandmother's grave and see what she looks like. I will bring all of the doctors in the world here to make her heart go again." And then, with a scientific sublimation of the destructive impulse, he exlaimed: *"I would like to cut her body to pieces and see what it looks like inside."*

In the night he *soiled himself*. The next morning he didn't remember what day it was or what time of the day, and after having vomited, he slept far into the day. To his mother he said, "Supposing you would break your neck, you know what I would do? I would put it together again."

2.

Fred's treatment was not completed when his first psychoanalyst left the city. She had been able to bring back to his memory the details of his grandmother's death and to discuss with him the phallis-locomotor tension of his maturational stage, which had made him associate aggressive and phallic intentions as characterizing a bad boy. However, it was obvious that other sources of tension of the period in question had not been verbalized. Also, as the psychiatrist suggests, it may be that the playful aggression allowed to this child in analysis made the transference too realistic and permitted the accumulation in Fred of guilt feelings concerning the psychiatrist similar to those concerning the grandmother. In any event, after the psychiatrist had left town, Fred began to speak of her with the same words which he had always used to characterize his relationship to his grandmother ("Why has 'my friend' gone away?"), and had a severe *epileptic attack* (the first one since the

beginning of the treatment) *five days* after the departure, thus repeating the pattern "dying five days after a beloved person whom one had attacked goes on a long journey."

After this attack, I took Fred over for treatment. The difference in the transference became obvious soon. Fred had a period of what one might call an infantile homosexual panic. After the first hour with me, he insisted in retrospect that at the time of his latest hospitalization *men nurses had taken his temperature all night and* didn't let him sleep. This of course did not correspond to the facts since he had been taken care of entirely by female nurses who had taken his temperature only once during the night. But to this phantasy there corresponded the first game he played with me during my first contact with him. Out of plasticine he formed "snakes" or "worms" and tried to get behind me so that they could bite my buttocks. (Remember how, in his play with the woman psychiatrist in a similar twofold representation he had jailed the old lady, then phantasied that an old lady was going to jail him). Correspondingly, at home, his relationship to his father changed. He would without provocation repeat, *"Don't touch me, Daddy,"* and especially when awakening from his nap he would experience and express moments of depersonalization—"I don't want you to come near me, Daddy. Where am I? Where is our home? I don't see well. Is everything all right? Everything looks bigger. Something is hanging from the walls awfully big and crooked." He also began to look intently at his father, remarking, *"Grandmother looked just like Daddy."* (We see that the man therapist not only attracted another [homosexual] transference but by his very existence brought about the manifestation of the corresponding [previously latent] conflicts at home).

In the meantime I questioned the mother again about the weeks preceding the first attack because it seemed that Fred's guilt feeling was not entirely covered by the explanation of the crime which he felt he had committed against the grandmother. Only against severe emotional resistance did the mother reveal an incident which had occurred about one week before the grandmother's dramatic heart attack. A toy had "inadvertently" flown from Fred's hand, hit his mother in the face and loosened one of her front teeth. Irritable as she may have been because of the special pressure which the grandmother's visit exerted on the home, and also worried for the precious front tooth, the mother had punished Fred corporally for

the first time in his life. As she described this, Fred's transference to both the woman psychiatrist and to me appeared in a new light —the crime complex established in connection with the grandmother's death obviously had irradiated, in retrospect and prospect, to include guilt feelings toward both father and mother and expectations of danger for and from the side of both. (It will be remembered that against his father he never had dared to express aggression as he had so liberally done with women.)

I shall report here the way in which the transference of one of these irradiations manifested itself in his first epileptic (minor) spell in our offices.

During the first weeks of his treatment with me, we had in accordance with his wish played dominoes. The possession of the double black, so he had decided, determined who had the first move. If he were not in possession of it and whenever he lost a game, he became angry and pale. I tried (as far as he, a good player, let me) to increase the number of his defeats gradually, in the hope of being able to observe the coming and going of an attack under emotional conditions approximately known to me. One day the threshold seemed reached. Fred had lost again and at a time during the hour when he could not hope to make up for it. Suddenly he got up, took a rubber Popeye doll and *hit me* in the face with it; then he stiffened, got pale, his eyes stared for a fraction of a second, and he vomited. He had hardly recovered when he said in a most pathetically urgent tone of voice, *"Let's go on playing."* He hurriedly built up his domino figures in front of him in a rectangle and in such a way that the signs pointed inward: he, their possessor, would have to lie inside of his configuration (like a *dead person* in a coffin) in order to read them. Fully conscious, he now recognized the queer configuration and gave me the look of a cornered animal. I pointed out to him that every time he hit somebody he felt that he must die. He confirmed this by asking breathlessly, *"Must I?"* I explained to him the historical connection between these feelings and the death of his grandmother, whose coffin he had seen. *"Yes,"* he said, a little embarrassed because up to now in spite of the mourning episode he had insisted that the grandmother had gone on a trip. I furthermore pointed to the similarity between his attack on my face during a game and the attack on his mother's face a week before the grandmother's fatal attack. It appeared that he

could not remember the attack on his mother while he seemed never to have forgotten the episodes relating to his grandmother. That *the mother, too, might die* as a consequence of the (earlier) aggressive acts and phantasies was obviously the deepest danger threatening him. This, too, was pointed out.

Beginning with this episode a series of interpretations used *specific moments* to bring *his fear of death into relation with his strong impulses and his low anxiety threshold.*

The effect of such interpretational steps can best be illustrated by an episode which occurred a few days after the interpretation reported above. In the afternoon Fred's mother, fatigued, was lying on a couch. Fred stood in the doorway and looked at her. Suddenly he said slowly, "Only a very bad boy would like now to jump on you and step on you, only a very bad boy would want that, isn't that so, mummy?" The mother, to whom I had explained some of the boy's problems, laughed and replied, "Oh *no, quite a good* boy might *think* that, but, of course, he would know that he did not *really want to do it.*" This conversation established a relationship between mother and son which made it increasingly possible for him to tell her, especially when he felt as if an attack were approaching, of his aggressions, anxieties, and religious scruples, all of which she learned to handle as well as her own attitude toward death permitted. At the same time she could apply in such instances certain preventive measures recommended by pediatricians.

We see what the interpretation had done. It had used the highly *affective moment* (*namely the repetition in transference of a scene which the memory resisted*) to verbalize for him his impulses against the protecting mother—impulses derived from the same source as those which had "killed" the grandmother and thus might bring about the mother's death. These impulses could now be admitted to consciousness, faced with the superior intelligence of his increased age, understood as more magic than real and even admitted to the mother, who far from either wildly punishing or lightly approving, understood and offered help. Such experiences are an inducement to further transferences, confessions, and conversations, which of course included Fred's aggressions against his father which consequently were most consistently transferred to the therapist not without leading to a major attack five days after this therapist, too, had gone on a trip (from which he returned, however). Thus, while

historical reality had emphasized the grandmother's death as the trigger stimulus mobilizing Fred's epileptic reaction, *analysis* proved Fred's sadistic wishes against his mother and death wishes against his father to be the *psychological reality* of his maturational stage which had made him susceptible for the traumatic event of the grandmother's death. This misunderstanding of the causal connection of what had happened to the grandmother and what he had done to her was transferred and interpreted first; what he was afraid might happen to the mother because of his deeds and wishes, next; while the most-dreaded and most deeply repressed aggression against the providers, father and God (the latter now united in heaven with the revengeful grandmother), could be approached only later. During this latter stage, his persistent attempts at building configurations of a safer body and a safer world, led to the construction (Figure 4). At the same time he day-dreamed of a compromise with God: why not eliminate death and birth, he asked him. Let children grow up and down, up and down, indefinitely. The block construction says the same in spatial projection: from a firm fundament roads lead away in two directions, but both come back and close the circle of safety—an earthly infinity.

In the course of these events Fred's attacks became fewer and

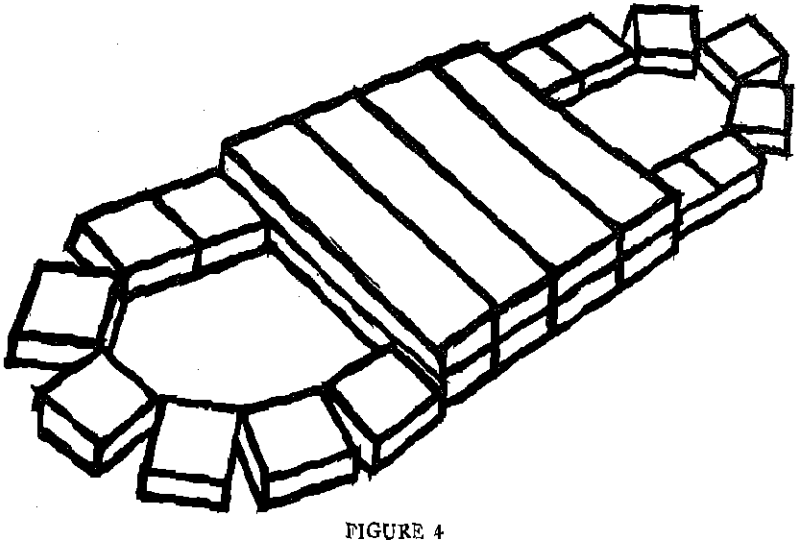


FIGURE 4

better predictable, drug applications could be reduced to a minimum and to well-circumscribed critical moments, and Fred recovered from minor spells more quickly and with less after-effect. We shall not predict that he will not have a minor attack now and again; but he may be spared major ones especially if the medical suspicion of a progressive lesion of the central nervous system proves unfounded. In any event, we have reason to consider it probable that psychosomatic vigilance can help such a patient to lead a normal life in which possible rare attacks are well isolated and for the most part predictable events.

Fred's case was chosen as our last example because it combined dramatic brevity with all the ordinary attributes of a situation in which an interpretation is warranted: The play has failed; the child is about to be overwhelmed by the guilt and the danger of the situation which he wants most to forget or to avoid. All defenses have proved inadequate, all attempts at restitution and atonement futile. The therapeutic situation has become the pathogenic situation, the therapist only one more evil. What seems needed is more cruel self-suppression, deeper regression, more radical repression. At this point the patient suddenly finds his experience put into words. The most human way (which always had seemed most completely impossible), namely, communication, now proves to be open.

However, once the first interpretation is given and its startling effects lived through, the child is conscious of the fact that the therapist understands or wants to understand more than he has been told, and that the patient is expected to coöperate in the verbalization of his suffering and what lies behind it. This brings with it complications and new resistances the description of which do not belong in this monograph.

3. *Medical Note*

During a short period of common affiliation with the institutions named below, I had the opportunity to discuss several case histories of epileptics with Dr. Frank Fremont-Smith, then Assistant Professor of Neuropathology in the Harvard Medical School and Associate Psychiatrist in the Massachusetts General Hospital. I have asked him to study my notes on *"Fred"* and to interpret the medical history in the light of the psychological study. I am indebted to him for the following abstract and statement:

1. The patient on first admission to the hospital was three years, one and one-half months of age. His family history showed nothing of significance to the present illness. Birth was full term, normal spontaneous delivery. The boy weighed 7.5 pounds, breathed and cried spontaneously. There was no cyanosis and no convulsions. The neonatal period was normal. No breast feeding. The developmental history too seems normal, with several attacks of sore throat and fever, once followed by a mild otitis media. At one and a half years of age and at two years of age the boy fell down a flight of stairs.

The first convulsion (five a.m.), two and a half months before admission, lasted 20 minutes; the second convulsion (one month later, 45 minutes. The third convulsion (at eighty-thirty p.m.) was described as follows: The patient cried out and vomited—twitching of eyes and mouth on right—then clonic convulsions of right arm and both legs—frothing at mouth—eyes turned to right —urinated—convulsion continued with violent twitching entire right side intermittently until morphine and scopolamine were given at eleven p.m. Twitching continued until admission at one a.m.

On admission and on subsequent days, physical examination was entirely negative with the exception that on admission, while in coma, deep reflexes and cremasteric reflexes were temporarily absent and there was a temporary *positive* Babinski reflex on the right. Laboratory studies, too, including lumbar puncture and fasting blood sugar, were negative with the exception of a moderate secondary anemia.

In the two and a half years following the first admission he had two convulsions, the first after finding the body of a dead mole, and the second immediately after inadvertently killing a butterfly. His sixth convulsion took place about a year later. He has continued to have "staring" spells and also occasional periods when he seems frightened and disorientated, usually preceded by vomiting. When he is entirely well he gets excellent grades at school and appears to make a good social adjustment outside the home.

The diagnosis from the medical record is idiopathic epilepsy with psychic stimulus as the precipitating factor and organic background not unlikely.

On several occasions the convulsions were observed to begin in the right hand, in twitching about the mouth, and once in the right

eyelid. Some of the attacks have involved the right side much more than the left, especially the right arm, and the eyes have been observed deviated to the right. During one attack the right pupil was greater than the left, and after two attacks there was transient positive Babinski reaction, once on the right and once bilateral.

2. The term "idiopathic epilepsy" is used to describe a syndrome, fairly clearly defined clinically but, as the term "idiopathic" indicates, etiologically obscure. Examination of the brain at autopsy in such cases, may reveal congenital abnormality, the scar of birth injury or of post-natal injury or infection, or occasionally an unsuspected tumor, while not infrequently careful study fails to demonstrate any abnormality which could be considered as an etiological factor. The capacity to react with a convulsive seizure is normal for man and for mammals in general, as well as for many of the lower vertebrates, under appropriate stimulus such as electrical or pharmacological stimulation. The threshold for the convulsive response may be lowered by various irreversible structural lesions (scars, brain tumors, etc.) or by reversible chemical alterations (hypoglycemia, anoxemia, etc.).

An "epileptic" may be described as an individual whose threshold is permanently or temporarily lowered so that stimuli which in the average individual would not result in an attack (either grand mal or petit mal) frequently precipitate a seizure. The onset of an acute infection and the accentuation of an emotional conflict are common precipitating factors, which may become effective in cases with gross pathology of the brain, such as scar or tumor, as well as in the cases in which the predisposing factors are much more obscure.

In the case of the four year old child here described no final decision can yet be reached regarding etiology. The convulsions are typical grand mal seizures and the minor attacks consistent with petit mal and psychomotor seizures. The tendency for the attacks to start on the right side and to be most prominent on the right, together with the right Babinski reflex observed once, immediately after an attack, and the inequality of the pupils observed in another attack suggest the possibility of cerebral pathology (congenital abnormality, old scar or slowly growing tumor) in the left hemisphere as a predisposing factor, while the clinical history and the special psychological studies make it clear that emotional conflict is frequently the precipitating factor.

Whether such conflict as this boy exhibited could precipitate a convulsion in a child without disturbance of the central nervous system other than that accompanying the emotional conflict itself must remain an open question. It should be pointed out, however, that whether the conflict results in convulsion or other bodily manifestations, insight into the psychodynamics of the conflict is essential to the understanding and treatment of the emotional immaturity and social maladjustment which are on the basis of the conflict itself. The seizures from this point of view, when induced by emotional stress, may be looked upon as psychosomatic crises which in other individuals, differently constituted, might become manifest through other organ systems, cardiovascular, gastrointestinal, etc., including the psychic sphere, as in "psychomotor attacks" and "epileptic fugues."

IV. CONCLUSION

A.

The psychoanalytic attributes of our material are on the whole the mechanisms first described by Freud as resistance, transference, and regression. They appear in the interplay of social, verbal, spatial, and bodily forms of expression.

To begin with the verbal, the very first words spoken by our patients on meeting us, betrayed their dominant system of defense:

> *John,* we remember, appeared armed to the teeth. Asked whom he was going to kill, he answered, *"me"*—with one monosyllable betraying the *"turning against himself"* of all the hate which his secret and other, less conscious reasons prevented him from expressing directly. *Mary,* however, did not say anything to the therapist until she had regained all her stubborn superiority. She only talked to her mother, in *lisping, whining* baby talk. We would not be surprised to find her use deliberate *regression* paired with stubbornness as a defense even in riper years. *Dick's* greeting *"are your eyes all right?"* makes the therapist the patient and the patient the therapist. It represents what Anna Freud calls "the identification with the (here potential) aggressor" and contains the *projective-introjective* mechanisms which prove so strong during later observations.—(*Fred's* first words are not recorded.)

Robbed or about to be robbed of the protective aura of maternal presence, how do our patients *act in space?*

> *John's* mother is nowhere near. While his eyes are evasive, his skin pale, he moves with unafraid strides. But he has surrounded himself with a *layer* of *weapons.* (He is the delinquent, afraid of further castration. His recent circumcision had been explained to him as a consequence of the fact that he had "played with himself," a fact which will have to be analyzed immediately after the resistance nearest to consciousness; namely, the secret, is worked through.) *Mary,* on entering with her mother, throws one mischievous glance across the room toward the therapist, then closes eyes and ears and almost *disappears* in the maternal skirt, holding the mother near the door. (She acts with hysterical dramatization and phobic avoidance. Ambivalent flight to her mother after a play disturbance with the father and with boys in a play group will prove to be her problem.) *Dick,* however, with hurried

> determination leaves his mother and *passes by* the therapist as if not interested in her. (Interest in the female body will immediately begin to dominate his play.) *Fred,* finally after some diffused handling of the toys, *goes right for* the psychiatrist's body. (Playful attack, in his case, will prove to be the defense against his fear of being attacked and of suffering an "internalized" [epileptic] attack.)

It is in the metaphoric and symbolical use of toys that all these defenses are first caught off guard; in the *microsphere* the child does what he does not dare to do in reality:

> *John,* in the macrosphere *armed against* doctors and police, in playing *"delivers" his secret,* although only in *metaphoric* allusion. *Mary,* the *bashful* one, has a moment of *mischievous hilarity* in pushing the toys and finally the toy train, although *using a protective extension in doing so. Dick, so indifferent* toward mother and psychiatrist, has many *urgent questions* about the toy cars, in which he plainly *alludes* to the female body. *Fred,* the *killer,* passionately wants to build a house—to *restore a body,* as we were able to translate the *symbolism* of his play.

Each one of these *indirect admissions* in the microsphere is an element in a personal transference:

> *John,* in delivering his secret metaphorically, gives the therapist what in reality is the *father's. Mary* betrays her playful interest in her *father* and in boys and (during the second contact) takes revenge on the therapist for a scene in which her father had reacted with irritability to her interest in him. *Dick* takes a little longer to express the more regressive wish to bite the *mother's* body, in the words, *"I want to bite your buttons." Fred,* after having "hurt" the therapist, wants her to "walk with a creepy walk" like the *grandmother.*

It is a question, partly only of words, which of the tricks of play language we are to call symbolic or metaphoric, which to consider analogies or allusions. A symbol, it seems, should be definitely of a higher order, very condensed and abstracted in its form, super-individual in its meaning and treated with a high degree of affectual inhibition and sublimation.

> *Mary,* who suffered a play disruption when overturning the *toy train,* develops a raptured admiration for shining locomo-

tives. Her first question on seeing me weeks later concerns the locomotive of the train which took me south. Her *F* in the meantime had regained her friendship by joint visits to train-yards. "Shining locomotive" has become a symbol of admired paternal power.

It will take some careful study to denote how early true symbols appear in play and what their fore-runners are. "Metaphoric" is an appealing parallel to "transference" (metapherein—to transfer); "allusion" has "play" *in it* (*alludere—to play with*). At the moment I would say that the play acts reported are analogies to conflict situations. The children unconsciously allude to them by transferring their ambivalence toward their parents onto the therapist and by representing other aspects of the conflict metaphorically in play.

But a child seems to be able to solve a problem in play or other activities only inasfar as the traumatic event alluded to mainly consisted of an *enforced passivity*, a violation by a superior force.

Mary, whose indignation with her irritable father and fear of operation are greater than her guilt, can "solve" her problem on the second day, at least enough to meet constructively an improved home situation.

Inasfar as the trauma involves "blood guilt," the primitive feeling of having magically violated an ambivalently loved person, only a conscious, verbally communicated "yes, yes—no, no" can bring relief. This need, becoming urgent with the successful although first unconscious allusion to the conflict, drives some patients from the treacherous play back into symptom and regression. At this point we offer *interpretation* as a help toward communication.

John, asked to name the uncles, answers with his symptom (defecation) and reasserts his defense—"*me*." *Mary* becomes stiff, blind, and dumb with anxiety when the toy train overturns. *Dick*, after having confessed that he wanted to bite the therapist's buttons, appears wrapped in clothes, in silence and in apathy. *Fred* gives me the first opportunity to observe one of his minor epileptic spells after having hit me in the face as he had done to his mother.

The play, we see, indicates the need which is both intensified ("ready to have its correlative feelings aroused") and in a state of

suppression; the *form of the disruption* alludes to the danger which would follow the fulfillment of the need.

> *John's* "me" indicates, that once his secret was revealed, something terrible would happen and that he preferred to be the victim. *Mary* dramatizes that, if she is too much of a tomboy and dares to envy the male his anatomical share, something similar to what already has happened to foot and genitals will, on the occasion of the threatened operation, happen to other parts of her body. *Dick* indicates that according to "an eye for an eye" he will be what his oral jealousy makes him wish his sister to be, namely, an unborn nothing. *Fred* in his arrangement of dominoes, confesses his expectation of death as a punishment or atonement for aggression.

All of this, of course, gives us only a first impression and allows only for tentative conclusions in regard to the *degree of emotional arrest,* the *depth of regression,* the *weakness of the defenses,* the *rigidity of conscience,* etc. On the one hand we weigh these impressions against the obstacles and weaknesses in the environment as transmitted by the parents; on the other hand, we have to reconstruct the degree of development attained when the arrest and the regression occurred, and weigh this positive aspect against the chances for our getting the environment ready to help the child beyond arrest and fixation when we succeed in making him set his face again toward the future.

B.

The goal of this description was a presentation of empirical data which (*a*) would allow the therapist and his study group to account for some of their diagnostic habits, and (*b*) could be of didactic-comparative use for non-therapeutic psychologists. However, clinical description, even where more skillfully handled, can only approximate such goals; and once such approximation is attempted, the focus shifts from the larger theoretical implications to the details of observation on which first conceptual steps can be based.

It seems advisable in conclusion to point to some of the practical and therapeutic aspects of our material.

Our "short stories" may have given the reader the impression that the psychoanalysis of a child is characterized throughout by high tension and by a rapid succession of dramatic insights. This is not

the case. After our interpretations have led to relieving communication and to promising improvement, long periods follow which are quiet, peaceful, even dull. The child plays, builds, paints, writes, and discusses whatever he pleases as long as his guilt and anxiety allow him to do so. Such periods mean recovery for the child, more intimate and slowly growing insight to the therapist. But the therapist by no means accompanies the child's acts with running interpretative commentary. Interpretations to children are rare and on the whole underlie the following guiding principles. They point out symptoms of disruption throughout the patient's life and sum up the problem behind them as it has been reconstructed on the basis of recent observation. However, they do not translate to the child the meaning of any playfully or skillfully accomplished act. Verbal self-consciousness in conditioning connection with playful activities is not desired; for these very activities must help the child later to contact the fields of cultural value, in which alone he can really find a recovery without self-consciousness. There are also no attempts at arguing for an interpretation by transmitting to the child the details of its derivation. The interpretation will be accepted by the child if both the child and the therapist are intellectually and emotionally ready for it; which means for the therapist if he is in the right mood and frame of mind to put his insight into coherent, constructive, and understandable words.

This point deserves emphasis in conclusion. Throughout a tedious piece of writing I have paid compulsive attention to details of clinical reasoning. An analytical instrument was to be demonstrated. But to learn to know the properties and the range of an instrument is one thing—to learn to use it unself-consciously and firmly, another. It is good to be explicit for the sake of training; for the sake of therapy, it is necessary to act with intuitive regard for implied probabilities and possibilities. The scientific world wants to know *why* we are so sure to be on the right track; the patients only *that* we are sure. Few patients (and they are apt to argue and doubt) want to know whether or not our interpretations are scientifically true; most patients are satisfied that they feel true and that they *give meaning to suffering*. Except where the parent already has learned to expect this meaning from elaborate analysis and synthesis, increased scientific conscientiousness on the part of the therapist by no means necessarily conveys a feeling of security to him. Some groups of

parents and adult patients, it is true, share the specialist's delight in new terminological, experimental, statistical rituals. The majority are bewildered by them. The conceptual frames of therapeutic habits, it must often seem to them, are like the microsphere in play, into which we project complex reality in order to have our wishes for omnipotence come true according to the less refractory microcosmic law and language. By reprojecting our interpretation into the macrosphere of social reality we are able to observe whether or not it provided constructive meaning within the patient's culture. By correlating it with those of other conceptual microspheres which have been longer and more consistently corrected by systematic experimental reprojection into physical reality we may see how scientific we are. But only if and where science will prove dominant over other sources of psychological strength will the scientific attitude in therapy also necessarily be the efficient one.

C.

It is an intriguing idea that even where nobody sees it or does anything about it children proceed to express their vital problems in the metaphoric language of play—more consistently and less self-consciously than they are able or willing to in words.

To be observed when playing is natural for children; it does not have to wait for the family's clinical surrender. If we can establish the language of play with its various cultural and age dialects[10] we may be able to approach the problem why it is that certain children live undamaged through what seem to be neurotic episodes and how early neurotic children may indicate that they have reached a deadlock.

This objective becomes important at a time when there is increasing awareness of both the extent of mental suffering and the impracticability and social deficiency of the alleviating techniques. Their results point to childhood as the possibly more economic time of correction.

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[10] In connection with Jean Walker MacFarlane's guidance study (12) I am having the opportunity to collect in regular intervals microcosmic constructions of two hundred unselected children of the pre-adolescent age and to enter into a developmental and statistical appraisal of some of the play metaphors first encountered in clinical work. What sort of test can be based on such material is still a debatable question. At any rate my contribution to H. A. Murray's *"Explorations in Personality"* is not as it has been titled a "Dramatic Production *Test*" but a clinical exploration.

The neurotic adult has usually made his choice of vocation and marriage companion on the basis of his neurosis. Both are endangered when that basis is reconsidered. The child's choices (except for that of his parents) are still preliminary; the changes we effect only replace changes which would occur with less planning. Furthermore, the adult patient usually develops a therapeutic dependency on his therapist, a dependency which every observing person will agree, often persists in the cured, and especially the much more frequent half-cured neurotic, in a form which differs from a neurosis only in the degree of terminological rationalization. One reason for this embarrassing fact undoubtedly is the impossibility, after one's analysis, of settling one's grievances with the childhood parents and of beginning life again, where the old road to isolation branched off. One has only one childhood. That which was merely repressed from consciousness, after having been reasonably developed and experienced, one may hope to liberate through analysis; but emotional impoverishment in childhood is incurable in later life, and to face the fact that one is crippled to the extent of having had the wrong childhood and to gain spiritually and intellectually from this fact is, after all, open to few.

The child's dependence, however, is his natural state. Transference in childhood has a different connotation; it is of shorter duration and less consistent, and what is transferred can usually be retransferred to the parents. The parents, in turn, are more accessible to correction and advice as long as they and the child are young, and small changes in the parents are often gratefully responded to by the child with obvious and far-reaching improvements. Thus, what is delegated to the therapist can be returned to the home before the child's personality development is completed and before all chances have been exhausted of identifying thoroughly with parents who are enlightened and live up to their capacity to love.

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